

A DESCRIPTIVE CATALOGUE
OF
THE ANTIQUITIES

IN THE
Museum of the Royal Irish Academy.

VOL. I.

ARTICLES OF STONE, EARTHEN, VEGETABLE, AND ANIMAL
MATERIALS; AND OF COPPER AND BRONZE.

BY

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Illustrated with Five Hundred and Thirty-six Wood Engravings.

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P R E F A C E.

THE following Volume consists of Parts I. and II. of the Museum Catalogue, the former issued in 1857, and the latter in 1860. It contains the enumeration or description of upwards of seven thousand five hundred articles, and is illustrated with five hundred and thirty-six engravings, drawn by Mr. Du Noyer and Mr. Wakeman, and engraved by Mr. Oldham and Mr. Hanlon.

Part I., extending to page 246, and containing the description of the articles of Stone, Earthen, and Vegetable Materials, published in August, 1857, to meet the exigency of the arrival of the British Association in Dublin, was, as well as the arrangement of the Museum, commenced after the Stated Meeting of the Academy, on the 16th March, of that year;—for which, see the preface of that Part, by the Rev. J. H. Todd, then President of the Academy.

Part II., containing the description of the articles of Animal Materials, and of Copper and Bronze, was published in December, 1860. Together they form a complete work.

The cost of this work, together with that of the registration of all the articles therein, was defrayed by a sum voted by the Academy, a Government grant, a large subscription from the members of the Academy, and the sales of Part I., the particulars of which will be found in the Treasurer's annual accounts, in the "Proceedings" of the Academy. The arrangement of the Museum and the literary labour of the Catalogue were performed gratuitously, and a portion of the expense of the correction of the press was paid by the Author.

Part III., published in March, 1862, containing the description of the articles of Gold, commences Volume II., which will be completed when sufficient funds are available, and is intended to contain the description of the articles of Silver and Iron, the "Finds," Ecclesiastical Antiquities, Coins, and Medals, the Human Remains; an index to both Volumes, and an appendix, bringing the registration down to the date of publication; together with a preface, containing a history of the Museum. The greater part of the wood-cuts for the continuation of that Volume have been already prepared.

The classification adopted in the arrangement of the Museum, and in this Catalogue (see page 2), is that according to MATERIAL and USE, irrespective of *Age*, for which latter we do not at present possess sufficiently authentic materials to enable us to adopt as a basis of arrangement the "Period" theory of Scandinavian writers.

W. R. WILDE.

DUBLIN, *November*, 1863.

PREFACE.

AT the Stated Meeting of the Royal Irish Academy on the 16th of March last, the following Resolution, proposed on the recommendation of the Council, was adopted :—

“RESOLVED—That the Council be authorized to expend a sum not exceeding £250, in the arrangement and cataloguing of the Museum.”

The work of classifying and arranging the Museum, and also the preparation of the Catalogue, of which the first Part is now published, was gratuitously undertaken by Mr. Wilde, who has devoted his time and labour to the task with an energy and zeal which entitle him to the warmest thanks of the Academy.

It is only fair to him to state that the difficulty of the undertaking was greatly increased by the circumstance that, almost during the whole period of his labours, the Museum was in the occupation of the workmen employed by the Board of Works in putting up glass-cases, &c., as well as in the painting and decoration of the Room.

Owing to this circumstance, together with the shortness of the time, it was not possible to do all that might be wished, especially as it was necessary to have the whole, as far as possible, completed before the Meeting of the British Association on the 26th of this month.

The remainder of the Catalogue is in progress, but it is hoped that the Part now published will be a sufficient evidence to the Academy of the zeal and indefatigable diligence of the compiler. It contains a description of the articles composed of Stone, Earthen, and Vegetable Materials—a classification which, on the whole, was deemed most convenient. It has also been illustrated by 159 engravings on wood, drawn by Mr. Du Noyer and Mr. Wakeman, and cut by Mr. Hanlon and Mr. Oldham ; and it is hoped that these illustrations will add not only to the interest, but also to the permanent value and authority of the work.

JAMES H. TODD,
PRESIDENT.

August 17, 1857.

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CATALOGUE
OF
THE MUSEUM OF ANTIQUITIES
OF THE
ROYAL IRISH ACADEMY.

EXPLANATION OF THE ARRANGEMENT.



LL attempts at an arrangement of objects of Antique Art must, to a certain extent, be arbitrary and artificial; and as, in the present state of antiquarian knowledge, a chronological classification could not be fully carried out, the simplest and most obvious mode which suggests itself is that according to *Material*. Such has, therefore, been adopted as the basis or primary division of the present arrangement of the Museum of Antiquities belonging to the Royal Irish Academy—with the exception of the Ecclesiastical objects, which, for obvious reasons, will be grouped within a separate section, irrespective of material; the “Finds,” or groups of Antiquities found together in particular localities, such as Crannoges, &c.; as also the Coins, Tokens, and Medals, and the Human Remains. The secondary division is that according to *Use*. The classification and arrangement usually employed in Natural History according to Class, Order, Species, and Variety, has, for the sake of convenience, been adopted. The following classification on this principle is capable of including every object to be found in the Collection of the Academy.

PRIMARY DIVISION, ACCORDING TO MATERIAL.

CLASS.	ORDER, OR SUBDIVISION.
I. STONE MATERIALS, . .	1. Flint. 2. Stone. 3. Crystal.
II. EARTHEN MATERIALS, . .	1. Clay and Pottery. 2. Glass and Enamel.
III. VEGETABLE MATERIALS, . .	1. Wood. 2. Amber. 3. Jet.
IV. ANIMAL MATERIALS, . .	1. Bone, Horn, Ivory, Skin, Leather, and Shell,—used in the Arts. 2. Textile Fabrics. 3. Animal Remains.
V. METALLIC MATERIALS, . .	1. Bronze, Copper, or Brass. 2. Lead. 3. Iron. 4. Silver. 5. Gold.

Excepted Classes.

- VI. FINDS.
- VII. COINS AND MEDALS.
- VIII. HUMAN REMAINS.
- IX. ECCLESIASTICAL ANTIQUITIES (*not stone*).

SECONDARY DIVISION, ACCORDING TO USE.

SPECIES.

1. WEAPONS,—offensive and defensive, used in War, the Chase, Fishing, &c.:—Arrow, spear, and javelin heads; sling stones; war-clubs, battle-axes, axe-hammers; skeins, daggers, swords, pikes; shields, armour, helmets; fire-arms, shot, &c.
2. TOOLS, AND WEAPON-TOOLS:—Flint-flakes, knives, scrapers, picks, chisels, wedges, adzes, cutters, celts (stone and metal), hatchets, gouges, paalstabs, saws, hammers, punches, whetstones and sharpening-stones, crucibles, touchstones and burnishers, moulds and designs.
3. FOOD IMPLEMENTS,—or articles employed in Raising, Procuring, Preparing, and Using Food:—Boats, paddles, ropes; fishing spears and tridents, hooks, gaffs, sink-stones, and net-weights; spades, forks, ploughs, sickles, and scythes; all agricultural implements; grain-rubbers, querns, millstones, mortars; kneading-troughs, lossets, pots, bowls, barrels, buckets, butter-

prints, pans, dishes, griddles; knives and forks and spoons; pitchers, bottles, jars; drinking-horns, cups, methers, noggins, salt-cellars, stills, &c. Under this head may be placed Food itself, such as bog-butter, cheese, &c.

4. **HOUSEHOLD ECONOMY:**—Furniture, articles of domestic use, and the toilet; piercers, needles, bodkins, shears, thimbles, and distaff discs; smoking pipes, snuffers, candlesticks; combs, razors, tweezers; tiles, weights, boxes, fire-irons, nails, nuts and bolts, chains and shackles, wheels, locks and keys, grissets, inkstands. Also models of forts and habitations, &c.
5. **DRESS AND PERSONAL DECORATION:**—Beads, necklaces, bracelets and armlets, torques, gorgets, anklets, head ornaments, tiaras, frontlets, pins, brooches, fibulæ, clasps, buckles, buttons, finger-rings, boots and sandals, wig-pins; leather and woven garments. Horse trappings:—Shoes, bits, straddles, and two-horse yokes, stirrups, spurs, harness studs, goads, &c., come into this section as belonging to Dress and Decoration.
6. **AMUSEMENTS:**—Objects used in games, as chess, draughts, &c.
7. **MUSIC:**—Horns, trumpets, harps; all musical instruments.
8. **MONEY:**—Coins and other means of barter. In this section are included seals and commemorative medals, &c.
9. **MEDICINE:**—Crystals, amulets, bullæ, medicine stamps, surgical instruments.
10. **RELIGION:**—Chalices, patens, bells, crosses and crucifixes, croziers, shrines, reliquaries, stoups, censers, candlesticks, and church furniture; ecclesiastical rings; bronze, ivory and stone figures and carvings, altar stones.
11. **SEPULTURE:**—Urns, vases, and the objects found therein; incinerated and other bones of men or the lower animals; Ogham stones, crosses, effigies, tombstones.
12. **MISCELLANEOUS:**—All objects, arranged according to their material, but the precise uses of which have not yet been determined with sufficient certainty to warrant their being grouped with any of the previous species.

VARIETY.

The varieties are such as occur in each set of articles of the species, serving the same purpose but differing in shape, design, orna-

mentation, or mode of application:—for instance, the various forms of arrows, spears, and swords; the different kinds of celts, of hammers, or of querns, and the different shapes of pins, brooches, and armillæ.

The Collection commences in the Northern Gallery, at the top of the left-hand staircase, where all the Stone articles are arranged, with the exception of some of the large Ogham monuments, the sculptured, and other stones too heavy to be placed in this compartment, most of which will be found on the ground-floor. The Gallery contains the first four classes, viz.,—those of Stone, Earthen, Vegetable, and Animal materials; also the Human Remains; and a portion of the Bronze. In part of the small Rail-case surrounding the Gallery have been arranged the Coins, Medals, and Seals. In this case will also be found several minute specimens belonging to the different compartments opposite thereto.

In the lower compartments, and in the cases on the ground-floor, will be found the remainder of the Bronze articles, together with the Iron, Silver, and Gold specimens; and also, examples of 'Finds;' consisting of typical articles from collections discovered in Crannoges, &c. In the cases on the ground-floor will likewise be found the Ecclesiastical Antiquities and the Scandinavian Collection, &c. In the crypt will be placed the boats and similar large articles.

Nearly all the small articles have been attached by wire, or cement, to moveable trays. The large, heavy articles have been placed on the lower shelves; and each shelf in the different compartments is numbered. Each tray or case is lettered according to its class or section, the letters being doubled where required. Every article is numbered; the numbers extending throughout the different species;—a new numbering commences with each species, and in some instances each variety of the entire series. Each illustration has been drawn according to scale, and directly on the wood.

CLASS I.—STONE MATERIALS.

NORTHERN GALLERY.—COMPARTMENTS I., II., AND III.

ALL primitive nations throughout the world, so far as we know—especially those located without the tropics and towards the northern regions,—whose maintenance chiefly depended on their courage, energy, and ingenuity, must, in the absence of a knowledge of the harder metals, such as copper, bronze, or iron, have employed weapons and tools of flint and stone for procuring food and clothing, constructing habitations, forming boats and rafts, and in defending themselves from their enemies. They also used stone ornaments, such as necklaces, rings, and pendants. As they acquired a knowledge of cereal food, and became acquainted with agriculture, they employed stone implements to till the ground, to bruise and triturate corn, and to bake bread. Finally, they interred their dead in stone chambers, or collected their ashes in stone urns, and erected over them tumuli of the same material. Upon some of the stones composing these sepulchral monuments we find traces of a peculiar ornamentation, characteristic of the time, and quite unknown during later periods.

Where the fruits of the earth do not spring spontaneously from the ground, with the natural luxuriance of tropical climates, and thus present, without culture, a sufficient supply of food all the year round, man must of necessity remain a nomad,—depending mainly for his subsistence on fishing or the chase,—until he has learned to domesticate his prey, and reduce the wild animals around him to his rule. Then he becomes a shepherd; or, as he renders the earth fertile by his labour, an agriculturist. In either case he ceases to be a wandering hunter, and remains more or less stationary, allowing time for the cultivation of those arts which, prompted by necessity and improved by taste, gradually elevate him in the scale of civilization.

In this primitive state the timber of the forest supplied him with materials for his rude dwelling, and with fuel for warmth and cookery. The skins of animals, which he killed for food, furnished him with clothing; these he fashioned with a sharp flint-flake, or hard stone edged-tool, and bound together with thongs,—using as a piercer, point, or needle, the bone of some fish, bird, or small mammal. At the same time the sinews of animals or thongs of skin, with perhaps some glutinous material resembling cement,—possibly pitch or resin,—enabled him to fix in wooden shafts or handles the knives, spears, and arrow-heads with which he slew and skinned the beasts on which he preyed.

To project the latter weapon, either in battle or the chase, the flexible branch, shaped by the sharp flint edged-tool, formed a bow, which was bent by a leather thong, or the twisted intestine of an animal. The wooden material—of oak, ash, and yew, fir, hazel, and birch, found in our bogs, and still existing as indigenous trees,—which formed the bow, the shaft of the arrow, and the handle of the lance or javelin, has perished centuries ago; but the durable materials of flint and stone remain, and of such implements the Museum of the Royal Irish Academy boasts the most extensive collection which has yet been made of the primitive weapons and tools of the early inhabitants of the British Isles. The elegantly shaped and highly finished spear or arrow-head would not be of any service to the warrior or the hunter if he did not possess the means of adapting to it a proper shaft, and attaching it thereto with the necessary ligaments. We may, therefore, fairly commence the description of the flint articles with that of the knife, cutter, or scraper.

Flint proper, or chalk flint, as distinguished from oolitic chert, is only found in a very few localities in Ireland, chiefly in the counties of Antrim, Down, and Derry; hence we learn without surprise that the great bulk of the specimens of that material have been procured from the province of Ulster.

The rarity of flint must have rendered these weapons very valuable in other districts.

If an ordinary oblong flint nodule be broken across in the middle, the fracture is conchoidal or shell-shaped, and if one of the portions of that flint were set on end, the artist could chip off with a hammer, or with a chisel and mallet, a number of fine flakes, running the length of the sides of the mass; more or less thin and long, or broad and thick, according to the natural purity of the flint, and perhaps the dexterity of the worker. Each scale or flake, no matter what its outer shape or outline, will always present the conchoidal fracture. The outside flakes, bearing the usual rough cortical silicate of lime investiture (examples of which may be seen in Nos. 355, 407, and 482), were generally valueless, and consequently cast aside. In striking off these flakes the tool used must have been a stone or flint; but of what precise nature we have as yet no definite information (see Tray **M**, for a collection of flint tools). In chipping or scaling a mass of flint, the artist appears to have struck it on the end, and as he passed round the block, striking in the centre of the angle made by the junction of any two chips, the scale must always have presented more or less of an obtusely triangular figure in its section; and, owing to the tapering nature of the flint mass, a leaf-like outline; while, from the peculiar fracture or cleavage of all flint, it was curved in the longitudinal direction, and also slightly convex from side to side upon the under surface. This under surface is invariably smooth, and to a certain degree polished; but, from the deficiency of lines upon it, and its invariable curvature, it can easily be distinguished from the smoothing and polishing produced by art. The edges of nearly all these flakes are sharp, and generally meet at a point at the extremity, while the butt, or portion to which the tool was applied, is usually chipped and broken, as if it required repeated blows to get it off. Each surface on the convex aspect is smooth, though occasionally presenting the wave-

like appearance of broken glass. This was the first attempt at a weapon or tool of stone. The artist, it would appear, chipped off as many scales or flakes as the mass would afford, and then threw aside the core or spud when it ceased to be any longer useful. There are a few such cores in the Museum ;—one of these, represented by the accompanying illustration, which is of the natural size, will be found on Tray A, No. 2 ; while such a scale or flake as that described above, and which partakes of the knife-form, is shown by Fig. 1, No. 1, on the same Tray. These flint-flakes generally vary in size from $\frac{1}{2}$ an inch to $4\frac{1}{2}$ inches in length, and from $\frac{3}{8}$ ths of an inch to 3 inches across at the broadest part.



Fig. 1. No. 1.



Fig. 2. No. 2.

In the year 1816, and again in 1848, his Majesty the King of Denmark, at the instance of the Royal Society of Northern Antiquaries of Copenhagen, presented to the Academy a collection of Scandinavian antiquities, principally composed of flint and stone weapons and tools, or models thereof. As these far surpass in size, although some of them do not equal in design or perfection of workmanship, many of the small flint articles belonging to the Academy, we would direct attention to the case containing them upon the ground-floor of the Museum. Therein will be found two models of those flint cores much larger than any in the Academy's Collection. (See Proceedings, vol. iv. p. 250.)*

* In the Rail-case A, facing the second compartments of this Gallery, may be seen a collection of obsidian cores and flakes, spears and arrows, from the coast of Mexico, showing the process of scaling in modern times, well worthy of attention. See p. 80.

In forming collections, as well as arranging specimens of ancient Art, much should be made subservient to ethnological science, by exhibiting the gradual development of process and design; and this is specially manifested upon reviewing the objects in the Stone department, particularly those of flint. Many persons might at first sight mistake these chips for accidentally formed fragments, but a closer inspection, as well as an examination of the gradual process of this art, will convince the inquirer that they were designed by the hand of man. The greater number of the flint articles belonging to the Academy were obtained by Mr. Oldham, now Director of the Geological Survey of India, while engaged upon the Ordnance Survey under Colonel Portlock, in the North of Ireland, about fifteen years ago;—they were collected for the most part in the counties of Antrim, Derry, and Down; and were procured by the Academy unaccompanied by any description or reference either as to the immediate locality, or the peculiar circumstances under which they were discovered. This Collection has been also enriched by contributions from Lord Farnham; and several of the more perfectly formed specimens were purchased as part of the Collection of the late Dean Dawson.

CLASS I.—ORDER I.—FLINT.

SPECIES I.—WEAPONS, AND WEAPON-TOOLS.

FIRST COMPARTMENT.—SHELF I., *Tray A*, contains one hundred and seventy specimens,—one hundred and sixty-seven flint-flakes, and three cores from which flakes have been chipped.

No. 1.—The knife-shaped flint-flake, figured on the opposite page. There are several similar fine, knife-shaped, curved, semi-translucent chips upon this Tray, especially Nos. 33, 36, 50, 69, and 94. Nos. 2, 3, and 23.—Large and small flint cores, the last nearly worked out; No. 2 is that figured on the opposite page.

Nos. 40 to 56.—A line of flint-flakes, placed upon the convex side, so as to show the under, smooth, curved surface. All these

knife-shaped flints were selected from the Oldham Collection, some of them have a thick blunt back, but the greater number are double-edged. The larger ones might have been held in the hand, and would have proved serviceable tools in cutting, skinning, or scraping. We have no evidence, so far at least as researches made in this country evince, that these knife-shaped flints were ever fitted in handles; but then it must be recollected that the horn, bone, or wooden handles or holders of such implements could not have endured (unless preserved in bog) during the many centuries that have elapsed since these flint weapons were used. In other Museums of north-western Europe, particularly those of Denmark and Sweden, we find implements of bone and wood, on each side of which were set, in a successive row, a number of these sharp flint-scales, like the sharks' teeth attached to the war-spears of some of the tribes of South Sea Islanders and New Zealanders of the present day. In other collections, particularly in Switzerland, flint-flakes have been found inserted in small wooden handles, precisely similar to the cabinet-maker's scraper used in modern art. From their slender shape and small size, many of these specimens could not have been used in the unassisted hand. See also the collection of flints in the Rail-case A, facing the second compartment.

Nos. 150 to 170.—Twenty opaque flint-flakes of the largest size, some honey-yellow, and all more irregular in outline than the generality of such objects. Of these, Nos. 150 to 165 were "found six feet under the present bed of the river Bann, lying, with several others, in one mass, on the old, or former gravel-bed of the river, not far from Toome Castle, and on the county of Antrim side." Nos. 166 to 168 "were found, with several others, deep in the bed of the river at Portglenone;" and Nos. 169 and 170 "were excavated at Portna Shoal, from one to three feet under the surface, on the Antrim side." All these twenty flint-flakes were collected by Charles S. Ottley, Esq., District Engineer to the Drainage of Lough Neagh and the river Bann, and were—*Presented by the Board of Works.*

SHELF I., *Tray B*, contains one hundred and six flint-flakes (from Nos. 171 to 276), which here assume somewhat of a spear or knife shape, having a sharp point, generally straight and double-edged, with a broad base, but still retaining the triangular character in section. Most of these show but little evidence of tooling or han-

diercraft beyond the circumstance of the adroitness with which they were cleft from the original core or flint mass; but Nos. 176, 179, 182, 188, 198, 208, 209, and 216, particularly, show the process of chipping at the edge, and a certain amount of tooling. The flints on this Tray vary in length from $1\frac{3}{4}$ to $4\frac{1}{2}$ inches, and in breadth from $\frac{3}{8}$ ths of an inch to $1\frac{1}{2}$ inches; some of them may have been attached to handles, and used as weapons. They formed a part of the Oldham Collection mentioned at page 9, and were nearly all discovered in the county of Down. Most of them are opaque, some apparently of an inferior quality of flint; about a dozen are of a dark orange or honey colour.

No. 207 is an arrow-shaped flake of Lydian stone, or what is termed black chert—an impure flint found in the central portions of the Carboniferous Limestone of Ireland, and at the base of the Killenny Coal formation. It is of a dull dark colour, approaching to black, is more opaque, brittle, and stone-like than flint, never possesses the same translucency, and does not so readily chip into conchoidal fragments. But, next to flint, it is one of the hardest of the siliceous rocks, and hence was used occasionally for forming tools and weapons by the inhabitants of those districts where flint was rare. There are a few beautiful specimens of this material to be found amongst the Flint Collection of the Academy's Museum. See, in particular, No. 286. *Lapis Lydius*, or, as it was denominated by the old Dutch writer, De Boot, so long ago as 1647, *Lapis Hibernicus*, is the true Touchstone of the ancients, and its power of gold-testing can be exhibited in these specimens of arrow and spear-heads; yet it is remarkable that, although there are several other stone implements preserved in the Collection equally capable of testing the purity of gold, and apparently serving no other purpose than that of Touchstones, we do not find among them a single specimen of Lydian stone.

SHELF I., Tray C, contains sixty-six articles, numbered from 277 to 342. They are of the broad-bladed, leaf, or trowel-shaped knife pattern, but in some specimens approaching that of the triangular arrow-head. They are generally sharp for about three-fourths of the edge on both sides, and vary in size from $2\frac{1}{4}$ inches long, and $1\frac{1}{4}$ broad, to $4\frac{1}{4}$ inches long, and $2\frac{1}{2}$ broad. Although the great bulk of these were evidently thrown off the original cores in shapes very nearly

approaching their present, yet very many exhibit the process of the secondary manufacture, particularly those on the second row; so that, although several articles on this Tray appear to be crude flint-flakes, the Art had evidently commenced, but had not attained perfection in any of them. In the great majority of these specimens the upper side shows a ridge running from the base to the point; but in all those of the second row, from Nos. 285 to 292, the back shows three faces, owing to a scale having been taken off the middle ridge, but whether previous or subsequent to its removal from the mother mass, cannot be determined with accuracy. Some of these,—as No. 277, herefigured two-thirds the full size,—are in the natural state all round the edge, but chipped or hammered into a tang or handle-shape at the bottom. This stalk-like projection exhibits one of the first signs of manufacturing skill in this department; by it these implements might, as tools, have been fitted into hafts of wood, horn, or bone; or have been attached to long handles, and used as spears or javelins. No. 285, and all others in that row, were chipped round the edges, thus forming another step in advance towards the perfect arrow or spear-head; but, like the specimens on Trays **A** and **B**, all these flints show, upon their under surface, the natural conchoidal fracture; and from Nos. 326 to 334 are so attached to the Tray as to exhibit that peculiarity. No. 286 is of Lydian stone.

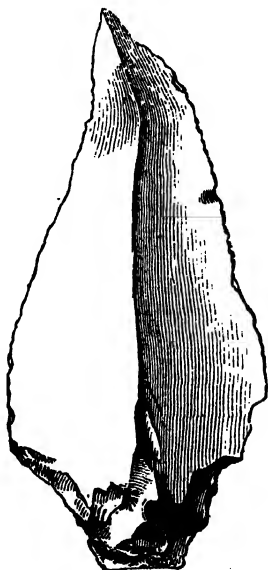


Fig. 3. No. 277.

We now approach a more advanced stage in handicraft and design. Three forms of manufacture are apparent in the foregoing and in the following flint articles. First, *Splitting*, which was done by a simple stroke, not always effective, perhaps, and occasionally producing irregular, ill-shapen portions, but sometimes forming very perfect tools and weapons, of which abundant samples have been afforded in the three fore-

going Trays. These implements were formed at once, either by a stone used as a hammer, or were cut off by a stone chisel or celt, and given their definite shape and required sharp edge by a single blow,—the latter necessarily accidental, but much more requisite than the former. The examples on the foregoing Trays show this form. Second, *Chipping*, which was performed as a secondary operation upon some of these flint-flakes, and apparently by a succession of slight taps, or gentle but well-directed blows with some sharp-pointed tool, probably a flint-spike. At first but one side (the ordinary convex one) was chipped, and then, in the more perfect implement, both sides were thus manufactured. None but the best semi-transparent, horn-coloured flint appears to have been susceptible of this amount of work, and therefore such only displays the perfection of the chipping process, in which, by repeated blows, bit after bit was flaked off, until the piece assumed the defined shape of the knife, spear, or arrow-head. The third stage was that of *Polishing*, by rubbing the flint, previously chipped into form, on a smooth, flat surface of hard stone. See Nos. 490, 935, 936, 937, and 953.

Such was the perfection attained, and the amount of artistic skill arrived at, that one is induced to believe that flint-chipping was a special trade. The gun-flint maker's art, while it gives some clue to the ancient manufacture, yet falls far short of what could, in ancient times, be achieved in this trade; and our wonder in examining some of these highly manufactured flints, particularly among the arrow-heads, is still more increased when we consider that they were nearly all formed by another stone; although some may, in later times, have been trimmed by a metal tool. The only implements in the Collection which could, so far as we now know, have scaled off, by delicate touches, these fine chips, are the long-pointed flint picks and punches shown on Tray *M*.

SHELF L, Tray *D*, exhibits a collection of seventy-seven flint articles, from Nos. 343 to 418, showing, in all its stages, the secondary

process of manufacture, or that of chipping, of which No. 343, figured below, one-half the natural size, is a good example. The great majority of these specimens are of the dagger or knife-shape, and some of them have been tooled all round, and upon every surface, so as to present a triangular section: of this class, see specimens Nos. 347, 351, and 355. All those in the three top rows are highly tooled.



Fig. 4.
No. 343.

No. 349 has the chipped edge most delicately serrated. Four specimens on this Tray are of a dark orange colour. No. 362 is of a bottle green, and No. 363 of a peculiar lake-red colour. No. 357 is one of the nearest approaches to a flint dagger of any object in the Collection; showing a rude attempt at a shoulder and an indented handle. Placed longitudinally in the centre of this Tray will be found eight specimens of knife-shaped implements, the most perfectly formed and the most elaborately wrought of any we have yet examined, and of which the accompanying illustration, Fig. 5, gives a very faithful idea; in fact, the second process, or that of repeated chipping, was brought to perfection in them. This illus-



Fig. 5.
No. 378.

tration, two-thirds the natural size, drawn from No. 378, is the most perfect of the curved flint knives, or scrapers, in the Museum, and resembles in shape, although it is much inferior in size, some of the flints in the Scandinavian Collection. The figure drawn from



Fig. 6. No. 385.

No. 385, and of the natural size, is the most perfectly-shaped knife of its kind which has yet been found in Ireland, or, as far as we know, in other countries; both it and the former, Fig. 5, still exhibit, on the under surface, some remains of the conchoidal

cleavage; but No. 343, Fig. 4, which resembles some of the leaf-shaped arrows, is chipped all over on both faces.

On the sixth row are arranged nine knife-bladed articles, from Nos. 386 to 394,—right and left-handed, five for the right, and four for the left; the majority of these are of reddish-coloured flint; they have been chipped on both sides, although the natural face has been, to a certain extent, preserved on the concave aspect. The greater number of them are $1\frac{1}{2}$ ths of an inch long. Fig. 7, No. 390, is the natural size. Had there been but one or two of these objects found, it might be supposed they were accidental, or defective arrows; but an examination of the nine specimens of the same variety will convince the inquirer to the contrary.



Fig. 7. No. 390.

The seventh and eighth rows, from No. 395 to No. 414, are manufactured specimens approaching the arrow and spear-shape, and have been elaborately chipped. The last row contains four large flint-flakes of an oval shape, averaging 3 inches long.

Flint knives, owing to their natural curvatures, could not have been effectively employed as projectiles, and must, therefore, have been principally used as tools; although fitted into handles of wood, bone, or horn, they may have served as daggers. Among primitive nations the transition from the tool to the weapon is but slight; in fact, the same article must have served the common purpose, the hammer being used as a war-mace, the hatchet as a battle-axe, and the long knife, or skeine, as a dagger; as in the present day the tomahawk of the Indian is used for the triple purpose of tool, weapon, and pipe. Flint and stone tools and weapons, although indicative of the most primitive art, and originally belonging to the earliest state of society through which man has passed, have, in some instances, been found in connexion with metal articles, and under such circumstances as leave no doubt of their having

descended to much later times than those to which it is usual to assign to them. The transition between the Stone and the Metal period must have been so gradual that it would be impossible to fix the definite limits of either, and therefore unsafe to attempt a chronological classification based thereon. In several of the earliest sepulchres we find small flint knives and stone chips among the incinerated bones deposited in sun-baked clay urns. An example of this kind may be seen in the collection of articles found in the cromlech discovered in the Phoenix Park (see Class II.)

How many of the flint implements, tools, or weapons in the foregoing series, as well as those on the following Tray, may be considered as fully formed, or were only in process of being chipped into some more definite shape, such as the spear or arrow-head of the next series, must be matter of conjecture; but it is quite manifest that upon many of them the manufacture has not been completed; thus, between the simplest flaked knives and the most elaborately manufactured spear or arrow-heads, we find a large collection of rude flint objects only partially formed, and which either indicate a very primitive state of art, were discovered, on working, to be defective, or were thrown aside accidentally.

SHELF I., *Tray E*, contains seventy-five flint specimens, numbered from 419 to 493. Of these, thirty on the three first rows are comparatively rude flakes of the medium size, and measure from $1\frac{1}{2}$ by $\frac{3}{4}$ ths of an inch to 4 inches by $1\frac{1}{2}$. They are mostly of the knife-shape. Upon the fourth row there are eight articles of a very unusual shape, and numbered from 449 to 456, presenting the appearance of a circular disc, with a prolonged handle, not unlike a short spoon. See, especially, Nos. 453 to 456. Their use has not been determined; neither is it known whether this shape was designed by the artist to be finally retained, or whether it was



Fig. 8. No. 454.

only a formative process towards a more perfect development. Similar objects have been found in Denmark. See *Afbildninger fra Det Kongelige Museum for Nordiske Oldsager i Kjöbenhavn af J. J. A. Worsaae*, s. 15, fig. 60.

Upon the remaining rows of this Tray are thirty-seven circular discs of flint, varying in diameter from 1 to 3 inches. Each is about $\frac{1}{2}$ an inch thick, with the exceptions of Nos. 460 and 469, which are probably cores, or worked-out spuds, similar to those with which the series of flint articles was commenced. (See Tray A, and also p. 8 of this Catalogue). They are all, with one exception, roughly chipped upon the upper side, and some on both sides, but the majority present upon the under surface the usual conchoidal fracture of the cross of the flint mass. These, it has been conjectured, were intended for sling-stones, although such an hypothesis is not borne out by any recorded fact.

SLING-STONES.—That sling-stones were generally employed by early nations long after they had become acquainted with the use of metal, and had attained to great perfection both in arts and literature, we have the evidence afforded by the history of the combat between David and Goliath; and that such weapons were used by the early Irish, we learn from some incidental references to them in our ancient histories. Thus, Kethlenn, the wife of the Dagda, killed Balor of the one eye, with a stone thrown from a sling, at the battle of Moy Tuiredh, fought before the Christian era; and Keating, quoting from the Bardic Records, relates the story of an Ulster prince named Furbuidhe, who was so expert that he could, at a great distance, strike an apple off a stake with a stone cast from a sling: and eventually slew Meave, Queen of Connaught, by a stone slung at her across the Shannon, when she was bathing near Innisclothran. The Dinnseanchus records the fact of the poetess Dubh having been slain by a stone cast from a sling, when she fell into the Linn, or dark pool of the Liffey, and hence the place was said to have been called from her Dubhlinn (see also Gilbert's "History of Dublin.") The ancient Irish warrior carried a stone in his girdle—the *Lia Miledh*—to cast at his adver-

sary : but how this was done, whether it was a sling-stone or a celt, we as yet know not. Finally, we read that when the celebrated chief, Cuchulann, went in his chariot from Tara to the Boyne to fish, he brought with him a number of stones to fling at birds.—*Harleian MS. 5280, British Museum.*

While the smooth water-worn oval pebble, picked from the brook or the beach, was always ready to the hand (although it would scarcely be preserved, or be subsequently recognised), yet stones may have been specially formed and shaped for the purpose of slinging, in order to insure a more certain and deadly aim,—like the ball of the Minie rifle. Antiquaries have assigned the name of sling-stones to a great variety of stone articles, but, as is proved in many instances, without sufficient foundation. It is evident that much time was spent in shaping those flint discs upon Tray **E**, two of which, Nos. 466 and 467, have natural or accidental holes. Similar circular or oval stones are to be found in most Celtic collections. Whatever was their use, it must have reached perfection in that, here figured one-third the natural size, No. 490. It was originally highly polished all over, and evidently formed with the greatest care both as respects its shape and finish, but several bits have been chipped off it, apparently from accident or use. It measures three inches in diameter, and is three-quarters of an inch thick in the centre. Other stones of a peculiar oval shape (see those in the Miscellaneous Collection, Rail-case **B**), are also believed to have been used as sling-stones ; and among the brass objects will be found a mould for casting pellets, apparently for the same purpose.



Fig. 9. No. 490.

ARROWS.—Whether the perfect spear, dart, or javelin of flint fastened into a long handle, and thrust, or thrown by the hand, or the true arrow-head of any shape projected by the bow, was the primitive weapon, is matter of conjecture. The latter is the more complicated weapon, and in its formation mani-

feats an equal degree of art, and greater delicacy of handicraft; while the former shows, in addition to the chipping into figure, that polishing of its sides which has already been referred to as the third, or final process in the perfection of flint manufacture. Such objects have, therefore, been assigned a more advanced position in this collection. There can, however, be little doubt that the arrow and the javelin existed contemporaneously. (See the flints in Rail-case A of this Gallery). Again, some of the largest of the arrow-shaped flints far exceed in size the javelin points, and were probably used as hand-weapons. In those parts of the country where arrow-heads are usually found, they are almost invariably denominated “elf-darts.”*

Arrow-heads of flint may be classed under five varieties, as shown on Trays F, G, H, and I. They have been chipped with great care; but none of them are polished. The arrow, it may be remarked, shows the perfection of chipping; the



Fig. 10. No. 514.

spear, of polishing. In arranging each variety, the rudest form has been placed first.

These varieties, as shown by the accompanying illustrations, all figured the natural size, consist of:—First, the Triangular, arranged on Tray F,



Fig. 11. No. 523.

figures of two of which are here given, the natural size. After passing through a series of developments, this arrow first becomes slightly curved at the sides

* To these arrow-heads, called, particularly by the Northern peasantry, “elf-darts,” or “elf-stones,” are attributed certain superstitious powers. Thus, when cattle are sick, and that the cattle doctor or fairy doctor is sent for, he says the beast has been “elf-shot,” or stricken by fairy or elfin darts (just as in Connaught and Munster they say it has been “overlooked”); and forthwith he proceeds to feel the animal all over, and by some legerdemain contrives to find in its skin one or more poisonous weapons, which, with some coins, are then placed in the water which it is given to drink, and a cure is said to be effected. This is a very old and wide-spread piece of folk-lore.

for holding the string which attached it to the shaft, Fig. 11, a variety common in the present day among the American Indians. It was then hollowed out at the base, to such an extent that in process of time it assumed the indented or Second variety of this series (Figs. 12, 13, and 14, all of dark honey-coloured flints), the perfection of chipping in some of the small specimens of which is truly marvellous. Upon reviewing the flint-flakes and rudely formed weapons and tools, we see that many arrow-shaped



Fig. 12. No. 562.



Fig. 13. No. 584.



Fig. 14. No. 585.

portions have been thrown off by the natural fracture; but all these have the usual curved cleavage on the under side; while those we now deal with

are not only chipped at the edge into a more definite shape than the former, but most of them have been wrought upon

both faces by repeated and well-directed blows of some sharp-pointed tool.

The Third is the Stemmed Arrow, having a tang or projection for sinking into the shaft, and the wings on either side of which gradually bend into the "broad arrow" shape. Specimens of this class are arranged, for the most part, on Tray G, of which the accompanying representation, Fig. 15, serves as the type. Of this class, we possess in the Collection a remarkable example serrated upon the sides and edge, and here figured the natural size, Fig. 16. Flint implements of the



Fig. 15. No. 611.



Fig. 16. No. 668.

jagged or saw character, although common in collections of Scandinavian Antiquities, are very rare in Ireland.

As we glance over the series of arrow-heads of this variety, we perceive specimens, Nos. 657 and 658, which approach the size usually attributed to the spear or javelin, and which, from their weight and magnitude, would, when affixed to a properly balanced shaft, appear too large and too heavy to have been projected by a bow, even when strung by the

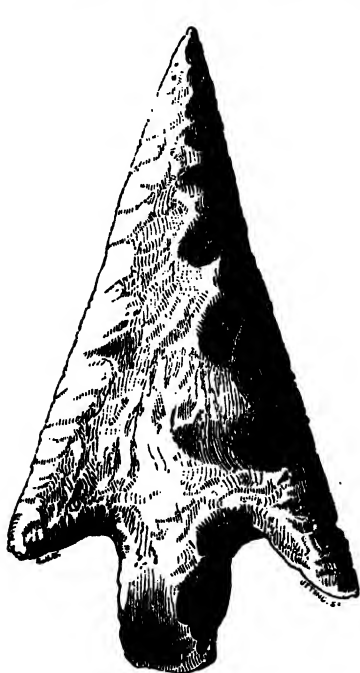


Fig. 17. No. 658.

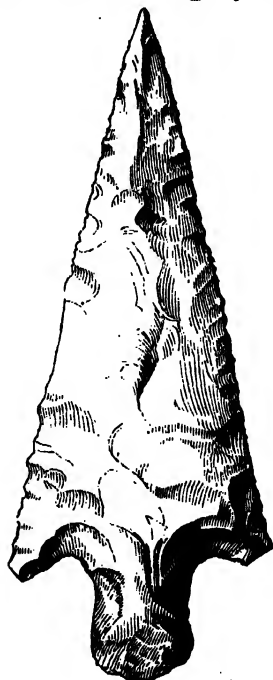


Fig. 18. No. 657.

lusty arm of a hardy Celt. The accompanying illustrations, drawn of the natural size, afford a good idea of these weapons. The broad one, Fig. 17, is a flint, and bears some slight traces of polishing; the narrow, Fig. 18, is of very dark Lydian stone, but showing a sufficiency of conchoidal fracture on its surface to establish its flinty character.*

* The engravings, Figs. 15, 16, 17, and 19, are from stereotypes of the woodcuts attached to Mr. Du Noyer's paper in the "Archæological Journal," vol. vii. p. 282; they are, therefore, not so fine in the printing as the other illustrations of this class.

By prolonging the wings until they extended as low as the central stem, the Fourth variety was attained, or what may be denominated the true Barbed Arrow, many beautiful specimens of which are presented on Tray H. The wings or barbs of this variety became, it would appear, in time, so much prolonged and indented, as to present the shapes of these elegant specimens shown in the three accompanying figures, drawn the



Fig. 19. No. 716.



Fig. 20. No. 724.



Fig. 21. No. 725.

full size, the last of which, with a prolonged point, is the only example of the kind in the Collection.

The Fifth variety is the Leaf-shaped, Fig. 22, generally very thin, and chipped all over with great care. (See Tray I.)

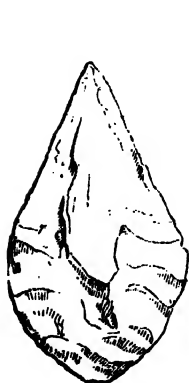


Fig. 22. No. 771.



Fig. 23. No. 851.



Fig. 24. No. 848.



Fig. 25. No. 837.

It is much more simple in shape than any of the foregoing ; but we have thus placed it at the end of the series, because it leads to the final and most perfect flint manufacture of

the weapon class—that of the Spear. The difference between the leaf-shaped arrow and the spear consists, not merely in the size, but in the outlines of the latter being almost straight. As, however, we pass down the series, we find some specimens of this variety of arrow-heads, especially Nos. 837, 848, and 851, which, although small, approach the spear-shape, as may be seen in the foregoing illustrations, figured the natural size, on the opposite page. See Figs. 23, 24, and 25.

SHELF I., *Tray F*, contains ninety-seven specimens of the first variety of arrow-heads, numbered from 494 to 590; commencing with the simple blocked-out form or type on the two first rows, which gradually assumes the perfect shape, as shown in No. 516. The first row instances the primitive attempts at the formation of the triangular flint arrow-head. No. 495 was discovered at Whitechurch, and No. 506 at Stradbroke, county of Dublin, and were—*Presented by Sir William Betham*.

No. 511 represents the rude flint mass of the Triangular Arrow, a perfect example of which is seen in No. 534. Each of these is $2\frac{1}{4}$ inches long; and the latter object so exactly resembles the large shark's teeth occasionally found in a fossil state, that one would think it had been moulded from such, or, at least, that the idea of this form was suggested thereby. Nos. 514 and 523 are those engraved, as figures 10 and 11, on p. 19. The latter is indented on the sides, and is of exceeding rarity. No. 534 shows the commencement of the process of chipping, as well as the deep indentation given to the base. Nos. 513 and 572 are of very transparent flint, a variety which is occasionally found upon the Antrim coast. Some other specimens on this Tray appear to be of the same material, but of inferior quality. Nos. 552, 584, and 585, are represented on p. 20.

SHELF I., *Tray G*, contains eighty-one specimens of the Stemmed Arrow, the type of which is represented as the third variety on p. 20. The numbers run from 591 to 672. All those on the first row, except Nos. 595 and 596, are either very rudely chipped, or have been left imperfect. Nos. 599 and 604 present a very peculiar shape, not seen in any other examples of the arrow class; and No. 605 is of a perfect heart-shape, thick in the centre, and resembling a

modern ornament. The four dark-coloured specimens, Nos. 620, 631, 650, and 657, are of Lydian stone. The first articles on this Tray show the early process in the manufacture of this thin variety of arrow, which reaches perfection as we pass down the series of very beautiful specimens to the end. No. 606 is the largest specimen in the Collection, being $4\frac{1}{4}$ inches long, and was evidently in process of formation either as a spear or arrow-head—probably the former.

No. 655, together with several others arranged in the bottom row, have been very minutely and beautifully serrated on their edges. No. 658 was—*Presented by Lord Farnham*; and No. 660, with some others of a similar form, were—*Presented by the Representatives of Leslie Ogilby, Esq.*

SHELF I., Tray H, extending from Nos. 673 to 755, contains eighty-three specimens of arrow-heads of the fourth variety, in which the wings or barbs were prolonged as low as, and sometimes lower than, the central stem; the typical illustrations of which, figured on p. 22, are here numbered 716, 724, and 255. The size of the specimens on this Tray vary in length from 3 inches to $\frac{3}{4}$ ths of an inch. No. 688 is the serrated specimen figured on p. 20.

SHELF I., Tray I, contains one hundred and ten specimens of arrow-heads, or small dart or javelin-points, numbering from 756 to 857, of which Nos. 771 and 851, figured on p. 22, are the types of this variety. No. 761 is a piece of transparent flint of a lozenge-shape, showing, on its surface, a somewhat different fracture from the usual conchoidal cleavage of flint; and No. 807 is a mutilated specimen of the same character.

While the form of the myrtle-leaf is that observed in the outline of the great majority of these specimens, we find it vary as we pass down the series, until, in some instances, it assumes that of a lozenge, and in others has a keel-shaped extremity, as shown by the examples given in Nos. 837 and 848, upon the two last rows in this Tray. See illustrations figured on p. 22.

SECOND COMPARTMENT.—SHELF I., Tray K, contains fifty-seven specimens, from Nos. 858 to 914. On the first row we find five flint articles, Nos. 858 to 862, which have attained the definite form of a weapon, somewhat between that of a spear and an arrow-head. Each is rounded at the base so as to form a truncated spear. Four of these are about $1\frac{1}{2}$ inches in the longest direction; but one of them,

No. 860, here figured the natural size, is $3\frac{1}{2}$ inches in its longest diameter, and at its thickest part measures about half an inch. It has been chipped all over with great care, and has a sharp edge all round. This peculiar style of tool, or weapon, reached perfection in this specimen, which, whether used as a knife, arrow, spear,

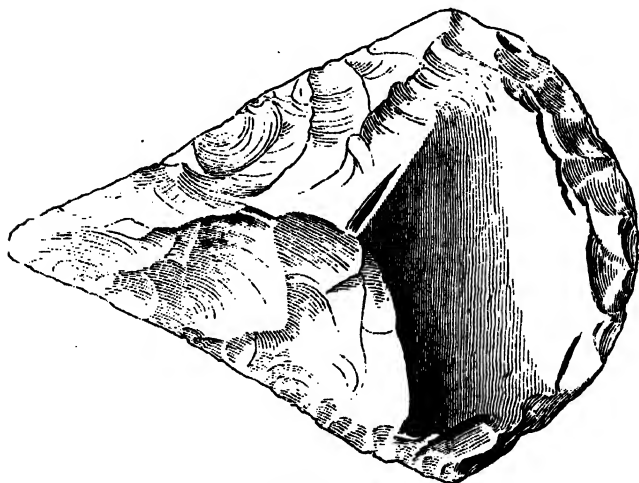


Fig. 26. No. 860.

or axe, was an implement of singular beauty of design, and exhibits great skill in the manufacture. The other articles on this Tray are chiefly of the lozenge-shape, and approach the form of the spear-head, with which the next series commences. They vary in size from No. 885, which is $4\frac{1}{2}$ inches long, and $1\frac{1}{2}$ broad, to No. 903, which is $1\frac{3}{4}$ ths of an inch long, and $\frac{5}{8}$ ths broad.

SPEAR-HEADS.—As already stated, it is difficult to draw the line of distinction between the large arrow-shaped flint weapon and the medium-sized javelin, or spear-head. Such weapons may have served the common purposes of both; but the spear, so far, at least, as we have the means of judging, was always flat, generally smooth and polished upon both faces, and in shape representing two unequal isosceles triangles placed on opposite sides of the same base. Upon Tray L we have a few fine specimens of this weapon, either perfect or in a

mutilated state; they differ from the arrow-heads in their flatness, thinness, polished sides, greater length, and straightness of outline. The accompanying illustration, here figured two-thirds the natural size, represents one of the finest specimens of this class of weapon yet discovered,—it is $6\frac{1}{2}$ inches long, and nearly 2 broad at the widest portion. It was apparently first chipped into the proper form, and then smoothed down on the flat by rubbing upon a level surface. This description of weapon, with the exception of the disc, No. 490, on Tray E, exhibits the first attempt at smoothing and polishing flint articles.

The Nos. from 960 to 964 are also of the same type, although not so perfect, and some of them not so large. See likewise No. 1269, in the specimens from the county of Donegal tumulus in Rail-case A.

SHELF I., Tray L, contains fifty specimens of spear-heads, in all stages of development, numbered from 915 to 964. The three first rows, containing the objects from 915 to 934, show the first attempts in the process of spear manufacture. No. 915 is a rude flint-flake, found, along with other objects of a like nature (see No. 1262, in Rail-case A), in a large tumulus at Donaghanie, county of Donegal, and—*Presented by Arthur R. Nugent, Esq.* It is $4\frac{1}{2}$ inches long by $2\frac{3}{4}$ broad. No. 916 was found in the parish of Tamlaght-o-Crilly, county of Derry. No. 918 is the most perfect example of the spear-head, in the rough state, of any in the Collection; it measures 6 inches long by $2\frac{3}{4}$ broad, and has been chipped all over. The flint mass was, however, defective, and this circumstance may have caused its rejection.

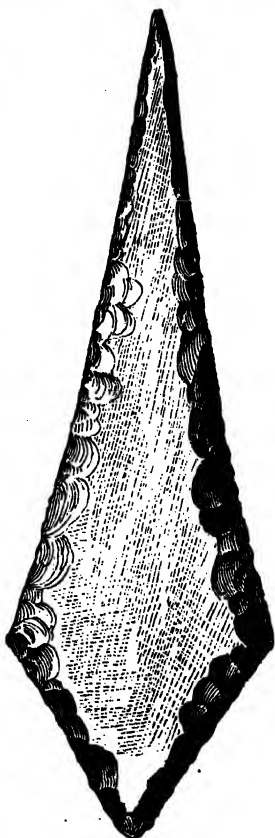


Fig. 27. No. 964.

tion. As we advance toward the end of the third row, the form assumes the definite figure, as shown in No. 934; but the smoothing process, characteristic of this description of weapon, is first exhibited on Nos. 936, 937, and 938. No. 954 is that engraved on the opposite page. It was found in the county of Down, and was—*Presented to Dean Dawson by Mr. A. C. Welch, of Dromore.*

SPECIES II.—FLINT TOOLS.

PICKS.—Having thus disposed of the various flint weapons and weapon-tools, from the simplest to the most complex and elaborately wrought implements; and having endeavoured, by arrangement, description, and illustration, to explain the process and art employed in their formation,—we now come to the consideration of those specimens that assume a more decided tool-shape, in the form of Picks, punches, points, chisels, or celts. Flint alone could, from its hardness, have been formed into a sharp-pointed tool, such as that here represented, Fig. 28, one-third the natural size; and all the specimens of which are arranged on Tray **M**. It is, together with the other articles of a like variety, of a dark-gray, close-grained material, carefully chipped into its present state; and as no specimen has been discovered in a more finished condition, it is, perhaps, the perfect instrument of its kind—the accuracy of the sharp terminal point being the object endeavoured to be attained. Held in the hand, it was probably used like the modern steel millstone pick, and employed in the execution of those finer kinds of workmanship displayed on the spears and arrow-heads. Although tapering at both ends, we invariably find one extremity with a finer point than the other. These may have been alternately pointed as they became blunted by use. A few tools of this class have narrow chisel-points.



Fig. 28. No. 4.

Next comes the FLINT CHISEL, approaching in form, but not altogether taking the shape of the stone celt, and being in-

variably polished for a short distance round the cutting edge, which is usually a segment of a circle,—the remainder of the tool being left in the rough state, as it would cost much time, and great labour, to smooth so hard a material all over. These implements are invariably of the hardest flint, mostly yellow or orange-colour. No. 27, of the chisel variety, is a unique specimen (so far, at least, as regards this Collection) of semi-transparent horn-coloured flint, mottled with dark dendritic spots, caused by oxide of manganese, and resembling the so-called moss marks in agate. The accompanying illustration, Fig. 29, represents one of these celt-shaped tools which may have been used as cutters and carvers of wood, bone, or leather. This instrument, which is $3\frac{1}{4}$ inches long, by $2\frac{1}{2}$ broad, could only have been employed effectively when fitted into a handle; but several others, upon Tray N, might have been used by the unassisted hand. Similarly shaped cutters will be found among the stone celts. See Nos. 130, 131, and 133, Tray Y.



Fig. 29. No. 24.

SHELF I, Tray M, contains nineteen articles, numbered from 1 to 19, of the sharp pick or punch class, described in the foregoing. The largest, No. 1, measures $10\frac{1}{4}$ inches long, and $2\frac{1}{4}$ inches broad: although approaching the form of a spike, it is blunt at each end. No. 2 is sharp at both ends; it is $7\frac{1}{4}$ inches long, and $1\frac{1}{2}$ inch broad. The next is about the same length, but somewhat thicker; and No. 4 is that figured on p. 27. It is three-sided, is 6 inches long, and $1\frac{1}{8}$ ths of an inch wide at the broadest portion. The upper extremity is blunt, but the lower comes to an exceedingly sharp triangular point. Upon the second row there are four chisel-pointed and wedged-shaped tools of the same character. No. 8 is a dark honey-colour. The third row contains five implements, the first of which is a rude, wedged-shaped tool, $3\frac{1}{2}$ inches long. No. 10 is a rude point, formed of the outer scale of a flint mass. The three next numbers are similar to those in the first row, but of smaller dimensions. No. 12, of dark cream-coloured flint, is a very perfect, elliptically-shaped tool, pointed at both ends, and $4\frac{1}{2}$ inches long. On

the last row are the smallest of this variety of tool; and No. 17, which is only $3\frac{1}{2}$ inches long, is very perfect in shape, and resembles that figured as the type of this class. No. 18 was found near Balinderry, King's County, and—*Presented by W. F. Barton, Esq.*

SHELF I., *Tray N*, contains nineteen specimens of flint tools, of the celt species, extending from No. 20 to No. 38. The two first are small, celt-shaped flints, the first rough, and the second polished at the edge. Nos. 22 and 23 are of the same character, but of a larger size. No. 24 is that engraved on p. 28. No. 27 is $4\frac{3}{4}$ inches long, and formed out of that beautiful specimen of greenish, semi-transparent flint described on page 28. The largest of these tools, No. 38, is $7\frac{3}{4}$ inches long, by $2\frac{3}{4}$ broad; while No. 20 is but $1\frac{3}{4}$ ths of an inch long. Some of these, as No. 23, are flat at one end, and may have been broken off either in the making or by use.

The flint celts, or chisel-celts, commence here with the smallest of this variety of tool, and extend to No. 37, which is of the true celt shape. It is smooth over the entire surface, but is only highly polished at the cutting edge. Nos. 25 and 36 are of Lydian stone; the former is evidently unfinished, and does not present any cutting-edge; the latter was found in the county of Meath. Nos. 24, 34, and 37, were procured from the county of Derry. Nos. 29 and 32 were—*Presented by Lord Farnham.*

In the RAIL-CASE A, opposite the second compartment, will be found (with the exception of the hammer-head, No. 7, on *Tray II*, and the bead No. 2, on *Tray PP*), the remaining specimens of flint in this Collection, consisting of 248 flint-flakes, or partially formed weapons and tools, purchased with Professor Oldham's Collection, but which it was not thought necessary to distribute through any of the Trays. Some of these exhibit the manufacturing process, and may be considered as knives, arrows, &c., in the secondary stage of formation. A continuation of the numbering on *Tray L* (964), added to the 38 articles on *Trays M* and *N*, and these 248 flakes, increase the aggregate enumeration of flints up to this point to 1252. Nos. 1253 to 1258 are six crude flint masses recently procured from the county of Antrim, through the kindness of R. Patterson, Esq., of Belfast. They present specimens of the different kinds of flint of which the ancient weapons of that material in the Collection were formed. No. 1259 is a flint mass, found in a crannoge in Loughlea, county of Roscommon. No. 1260 is a

large, natural flint, resembling a knife in shape. No. 1261, a very beautiful flat flint celt, $8\frac{1}{2}$ inches long, and—*Presented along with the Library of the late W. E. Hudson, Esq.* Nos. 1262 to 1269, eight flint articles, discovered in a tumulus in the county of Donegal, with other stone implements, and—*Presented by Arthur R. Nugent, Esq.*; of these, No. 1262 is a large curved flint knife, imperfect, but originally about 5 inches long, and $2\frac{1}{2}$ broad; it is chipped all over on the convex side, is of a similar character to, although much larger than, Nos. 415 to 418, on Tray D. No. 1263 is a good specimen of the third variety of arrow-head (see Tray G). Nos. 1264, 1265, and 1266, specimens of the fifth variety of arrows. No. 1267, a specimen of the first variety of arrow. No. 1268 is a large, flat spear-head, in process of chipping: the most perfect of its kind in the Collection, having been, in all probability, just prepared for the polishing process. No. 1269 is one of the most beautiful specimens of flint spear-heads in the Collection, being even more elegant in its outline, and more truncated in the base, than 954, Tray L, figured at p. 26; it is slightly imperfect at the top, but is still 5 inches in length. With these was a small, perforated, four-sided sharpening stone, $2\frac{1}{2}$ inches long (see Mr. Wilde's communication in Proceedings, vol. iii. p. 260). Nos. 1270 and 1271 are two arrow-heads of the second and fifth varieties, found in the excavations at Portglenone, in 1851 (see page 10). No. 1272, a very beautiful specimen of spear, or arrow-head of chert. Nos. 1273 and 1274, two arrow-heads, of the second and third varieties, from Ballycragh, county of Antrim; the latter appears to have been acted on by fire. No. 1275, a piece of charred flint, one of eight articles, consisting of a bone bodkin, a thin scale of copper, and small pieces of stone, found mixed with fragments of human bones, in a large cinerary urn, discovered in a tumulus at the Hill of Rath, near Drogheda.—*Presented by Mr. W. Kelly* (See Proceedings, vol. ii., p. 261.)*

* In the Rail-case containing these flint articles will be found a number of specimens of obsidian, illustrating the process of weapon-making from flint as practised in this country in former times. They consist of six cores, twelve flakes, two spear and seven arrow-heads, all of obsidian; together with a small black celt, or chisel, probably used for flaking. These were procured from the island of Sacrificios, on the coast of Mexico, and were—*Presented by Edward Groves, M.D.* (See the Rev. Dr. Todd's communication, Proceedings, vol. iv., p. 371.)

This concludes the enumeration and description of the flint objects in the Collection, which now amount to 1275. As no allusion, of even the most remote and traditional character, to flint weapons, tools, or stone implements of any description, has yet been discovered in the searched Irish records, we must refer these objects to the very earliest period of the inhabitation of this island ; but we are unable to connect them with any historic era or any particular people. They all belong to the pre-metallic period.

Among the uses to which flint and other sharp stone knives have always been attributed by writers, is that of Sacrifice ; but so far as any documentary or traditional evidence relating to this country is concerned, we are not warranted in supposing that propitiatory sacrifices were offered during Pagan times, or, if they were, that flint or stone implements were employed in such usages. Funereal sacrifices appear to have been performed. That stone knives were used for sacrificial purposes in very early times, and in all countries, history leaves no doubt ; but I am inclined to believe that as the forms of sacrifice, next to the rites of sepulture, were the latest retained by any people, and amongst those traditional usages in which all the details were longest preserved, the stone knives originally used, when there was no knowledge of metal, continued to be employed in later times, even when metal had become general ; not so much on account of any supposed virtue in the stone, but because the usage was *old*, and the odour of sanctity attached to it ; even as in the present day the operation of circumcision is performed by the Jews in many countries with a stone instrument ;—and a reverence for the authority of the past influences the ceremonial, if not the spirit, of all religions.

Reviewing the flint weapons and tools already described, together with those of stone, of a somewhat similar character, now about to be enumerated, it is impossible to resist the conclusion that they all belonged to a people with industrial pur-

suits, arts, and habits of life identical with those tribes who, at one time, occupied the whole of north-western Europe and the other British Isles, as well as Erin. If they possessed a literature, the archæologist has failed to discover it; and so far as dim tradition lends its feeble light to aid us in the investigation, they appear to have been civilized from without. These propositions, if true, do not militate against the popular idea, first gleaned from the Bardic records and traditions, that Ireland was colonized by an oriental people; they only tend to prove the inhabitation of the island before the arrival of any such civilized colony.

These flint and stone relics, together with the sepulchral remains of the early races of this island, are to the antiquary what the footprints and fossil marks in geological strata prior to the present, are to the palæontologist, out of which he peoples, with plants and animals, a locality, long antecedent to its primeval inhabitation by man. They are the traces of the first wave of population—the pre-historic data which aid and confirm Bardic traditions. Certain it is, that oriental adventurers from some of the countries surrounding the upper border of the Mediterranean—the original seats of art and learning—passing in ships through the Pillars of Hercules, and coasting along the Atlantic-washed shores of Europe, never could have been a people trusting alone for support in time of peace, or for defence in war, to those rude flint and stone weapons and tools which accident has brought to light, and the labours of the antiquary have grouped together in this portion of the Collection. The men who trusted to the flake-knife, chisel, or arrow of flint, and the stone celt, although they might have crossed in their tree-stem canoes, or skin-covered corraghs, from the Continent of Europe to the nearest part of Britain, and from the nearest point of England or Scotland to Ireland, never could have constructed the craft, nor shaped the course of the vessel that launched upon that voyage of discovery referred to by the Irish Bardic historians.

CLASS I.—ORDER II.—STONE.

SPECIES I.—WEAPONS.

From the hard, sharp-fracturing flints used either as weapons, cutters, or weapon-making tools, we pass to the softer and more easily worked rocks, but such as still possess sufficient hardness, toughness, density, and susceptibility of polish, to form serviceable wood-workers, and, in case of necessity, effective weapons, although not susceptible of as sharp an edge, or point, as a flint, or any siliceous rock.

ARROWS AND DAGGERS.—Stone weapons (not silex), with the exception of celts and axes, and such projectiles as sling-stones and cannon-shot, must, from the nature

of the material, be rare. Stone arrow-heads, of sufficiently small size and sharpness, would be too brittle to be either effective or durable. To obviate this difficulty, however, an ingenious contrivance was resorted to in the only instance in which we find a stone arrow, or javelin-head, in the Collection,—Fig. 30, No. 13, on Tray O, and here represented the natural size, and

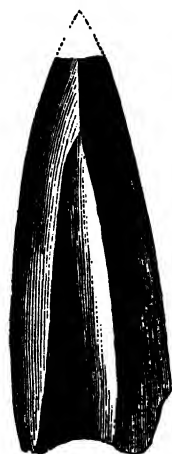


Fig. 30. No. 13.

which is grooved on the sides for the retaining slips of the shaft to which it was affixed. It is of smoothed, dark shale, $\frac{1}{8}$ th of an inch in thickness.* There are in the Collection a few stone knives, or dagger blades, attached, together with a miscellaneous assem-



Fig. 31. No. 8.

* This illustration is printed from a stereotype block of that given in the "Archæological Journal," vol. vii. p. 288, referred to at p. 21.

blage of stone objects, chiefly of the weapon class, to Tray O, in the second Compartment, of which No. 8, figured on the last page, two-thirds the actual size, might be fixed into a handle, and used either as a knife or dirk. It is composed of red sandstone, was originally polished, but, from the action either of air or water, it has now become roughened upon the surface.

Of the sword, knife, or dagger-shape, but larger, and much sharper at the point, are those objects from Nos. 1 to 8, on the same Tray, the first of which is a remarkable, slightly curved, sword-shaped slate, 23 inches long, and nearly 2 broad, "found about eight feet under the surface, in gravel, under peat," in excavating a minor drain from Lough Aclaureen to the river Clare, county of Galway.

Of the sword-shaped stones, the specimen here figured, one-



Fig. 32. No. 10.

half the natural size, is a good example. It is imperfect, but enough remains to show that it partook of the agave-leaved form of the bronze swords of the metal class. Most of these stone weapons came either from Connaught, or those portions of the Shannon bordering on that province. Two stone objects, resembling cleavers, will be found at the bottom of Tray O, of which this, here represented one-fourth the real size, is the most remarkable specimen. It is of shale, and was found in the Shannon.



Fig. 33. No. 20.

Most of the other stone articles which either approach in shape that of the weapon, or to which some such supposed use attaches, will be found among the Miscellaneous Species at the end of this section.

SHELF I., Tray O, contains twenty articles of the stone weapon, or weapon-tool species, and resembling swords, daggers, knives, and cleavers. No. 1, a sword-shaped piece of soft clay-slate, 23 inches long, and $1\frac{1}{2}$ broad, found, as described above, in cutting a drain from Lough Aclaureen, in the drainage district of Monivea, and which, together with No. 6, of slaty Lydian stone, an imperfect specimen of the dagger, or spear variety, also found in the same district, was—*Presented by the Board of Works.* No. 2, of slate, sharp at both ends, $12\frac{1}{4}$ inches by $1\frac{1}{8}$. No. 3, a light-coloured slate of the knife-shape, broad at top, and narrow at bottom, $10\frac{1}{4}$ inches by $1\frac{5}{8}$. No. 4, a very perfect spotted dagger of clay-slate, 10 inches long, by $1\frac{1}{4}$ broad, and $\frac{1}{2}$ an inch thick. No. 5, a rude, broad knife-like implement, $8\frac{3}{4}$ inches, by $2\frac{1}{4}$ at the bottom; of fine yellow sandstone, found in the shoal at Menlo, in the Corrib River, near Galway. No. 7, a double-edged knife, or dagger of slate, 4 inches by $\frac{3}{4}$ ths; sharp at the point, like the following, No. 8, the most perfect specimen of the dagger variety of red sandstone, weather-worn, $5\frac{3}{8}$ inches by $1\frac{3}{8}$, and figured as the illustration of this species at p. 33.—*Presented by Lord Farnham.* No. 9, a celt-shaped knife, figured on p. 43; it is of fine red sandstone, $6\frac{1}{2}$ inches by $1\frac{3}{4}$; sharp at the point, flat at the right-hand edge like many celts, and having a ridge running up the centre. It was found in the county of Down. No. 10, a very perfect specimen of the sharp, two-edged sword, or spear, of soft clay-slate, 7 inches long by $1\frac{1}{2}$ broad at bottom; perfect at top, but broken off at bottom; figured at p. 34. No. 11, a thin spear-shaped piece of blue clay-slate, slightly imperfect at both ends, $7\frac{3}{4}$ inches long, $1\frac{1}{4}$ at widest part, and $\frac{1}{4}$ of an inch thick. It and No. 10 might have been used as models for casting metal weapons. It was found in the county of Westmeath, and was—*Presented by Dr. Clarke.* No. 12, the top of a spear-head, or broad sword of coarse gritty slate, $3\frac{1}{2}$ inches long, found in the county of Wicklow. No. 13, the arrow-head, Fig. 30, p. 33, of shale. On the third row we find four articles, varying in shape from that of a razor to that of a short cleaver. No. 14, of dark soft slate about the size and shape of a modern razor-blade, is $4\frac{1}{4}$ inches long, and $1\frac{1}{8}$ broad; the end formed into a sort of handle. Nos. 15 and 16, larger specimens of the same variety, are of shale; the latter $5\frac{1}{4}$ inches by $2\frac{1}{4}$. No. 17, a thicker specimen of this variety, $5\frac{1}{4}$ inches long, by $2\frac{1}{4}$ broad, of porphyritic greenstone, mottled with pink felspar. No. 18, a knife-shaped piece of metamorphic slate, $7\frac{1}{4}$ inches long

by $1\frac{1}{2}$ broad. Nos. 19 and 20, at the bottom of this Tray, are curious specimens resembling cleavers, having handles and sharp edges. The former, of fine crystallized greenstone, $6\frac{1}{4}$ inches by $2\frac{1}{2}$, was found in the county of Down; No. 20, of dark shale, $5\frac{3}{4}$ inches long, and $2\frac{3}{4}$ broad in the blade; sharp at the end and also at the lower edge, figured on page 34. Of the foregoing implements, Nos. 3, 7, 14, 15, 16, 18, and 20, were found in the excavations made in deepening the bed of the river Shannon, and were—*Presented by the Shannon Commissioners.*

STONE SHOT.—In the bottom shelf of the Cross-case, between the second and third Compartments, are placed a number of round stones, some of them natural sandstone and ironstone nodules, but others, especially Nos. 1 to 12, are artificially formed stone shot, such as were used in the fifteenth and sixteenth centuries. They vary in size from $1\frac{1}{2}$ to 5 inches in diameter. Some are only partially formed.

SPECIES II.—TOOLS, AND WEAPON-TOOLS.

CHISELS.—As we concluded the description of the flint tools and weapons, so (with the exception of the foregoing) we commence that of the stones, with the chisels,—the link appearing to be unbroken, although the form has been modified by the material. The Stone Chisel, typical illustrations of three varieties of which are given below, differs from that of flint in having, in general, angular side-edges, a square



Fig. 34. No. 5. Fig. 35. No. 21.

Fig. 36. No. 2.

top, which, in some specimens, bears evidence of having been hammered; and in having the end, or cutting edge, instead of being rounded off, shaped on both sides like a turner's furmer. Of the chisel variety may be specified those objects upon Tray P, some of which approach in appearance to metal. But while we style these implements chisels, there is no doubt that they could have been inserted into handles, and used as war-axes. Fig. 35 is a unique specimen of its class; fixed across a handle, with each

extremity projecting, it would also prove a formidable weapon, being 5 inches in length.

SHELF I., Tray F, contains twenty-four specimens of chisels, and chisel-shaped varieties of celts, numbered from 1 to 24, eighteen of which were discovered when deepening the fords of the river Shannon; chiefly those of Meelick, Keelogue, and Athlone, and were—*Presented by the Shannon Commissioners*. No. 2, of shale, Fig. 36, on p. 36, is 3 inches long by $1\frac{1}{4}$ wide. No. 5, Fig. 34, one-eighth the natural size, differs from the generality of such tools in being rounded in the handle, and chamfered off below by rubbing or grinding. It and No. 4 are of a hard, fine-grained siliceous basalt, approaching in appearance to metal; the precise locality from whence derived is unknown, but it was probably the coast of Ulster. The greater portion of the tools on this Tray have straight cutting edges, but a few of them are curvilinear, others are celt-shaped both on the sides and edges.

With the foregoing and following exceptions, all these implements are formed of shale, or clay-slate, such as may be found in the coal-measures, and in abundance on the sea border of the county of Clare. Nos. 14 and 18 approach clay impostone. No. 16, of dark shale, approaching to Lydian stone, is 6 inches long, and $1\frac{1}{4}$ wide, and has nearly parallel straight side edges. No. 19 is a celt-shaped chisel, flat at top, and oval in the middle section, or grasp; it is formed out of fine-grained honestone or whetstone, is $7\frac{1}{2}$ inches long, and $2\frac{3}{8}$ broad. No. 21, of siliceous clay slate, is that represented by Fig. 35. No. 22 of siliceous basalt, passing into amygdaloid, is marked by a red lichen. No. 23 is a peculiarly formed, celt-shaped chisel, curved, and having a pointed extremity somewhat like the large celt, No. 38; it is $7\frac{1}{2}$ inches long, and 2 broad, and is formed out of a shale nodule, the strata of which may still be observed upon its surface. No. 24 is the ovoid chisel celt of dark shale figured on page 43, Fig. 46.

STONE CELTS—so called from the Latin word *celtis*, a chisel, in all probability their original use—are the most widely distributed stone implements in the world. They have been found in great abundance in Ireland, and in every locality and position, but chiefly in clay or gravel. The Academy's Col-

lection contains upwards of five hundred examples of this form of tool-weapon, about one-half of which were recovered from the mud, clay, or gravel laid bare in deepening the shoals and fords of the river Shannon, or its tributaries, during the years 1843 to 1848, and were presented to the Academy, with a great quantity of other valuable antiquities, by the Shannon Commissioners. (See Proceedings, vol. ii. pp. 312 and 594 ; vol. iii. pp. 65, 263 ; and vol. iv. pp. 35 and 394.)

The shape of the most common variety of stone celt is similar to that of the muscle shell, which would almost appear to have suggested the idea originally : many other objects in nature seeming to have given origin to the early forms of Art. The lower, or cutting end, is always hatchet or chisel-shaped, slightly convex, and rubbed down to as smooth and sharp an edge as it is possible for the material to attain. The middle usually swells into an oval form, and then tapers to a more or less rounded point ; but while the general contour is preserved, the shape is somewhat modified by the description of stone of which the implement is composed.

In material the stone celts afford examples of nearly every description of rock found in Ireland suited for the purpose, by its hardness, toughness, absence of brittleness, and susceptibility of polish ; from the hard sharp sillex, the metallic basalt, the highly polished porphyry, the splintery felstone, the rare syenite, and the compact greenstone, to the smooth clay-slate or shale, the brittle sandstone grit, the soft whetstone, or even the micaceous schist,—with all their different varieties and combinations, &c. And as these objects have been found in such abundance, and in so many localities, the celt-maker must have been dependent on the suitable stone of his particular district for the materials of his trade. As yet, all the specimens which have turned up are formed of native, and mostly of rocks common in Ireland. The antiquary seldom possesses a sufficiently accurate knowledge (even if such were required) of all these stones, to be able to arrange them either

lithologically or topographically. The physical characters of polished rocks are not always sufficiently marked to permit of the former; and as great numbers have come into the Collection without any memoranda, the latter could not have been effected; they have, therefore, been arranged chiefly according to their size and shape, as most subservient to the secondary division of this classification; viz. that by Use.*

Much art has been displayed in the formation of these celts, which, when perfected, were polished with the greatest precision all over, exhibiting great varieties in shape, and great diversity of manufacture,—either owing to the character of the stone, or to the ingenuity or handicraft of the people who formed them. So far as I have observed in examining and arranging this Collection, all the celts remarkable for their beauty, size, or polish, were made out of the best materials, such as flint, porphyry, greenstone, syenite, or feldstone; whereas those of ill-shape and rude manufacture have been formed of portions of slate or shale, simply ground down to a cutting or hacking edge, and many of which exhibit on their surface the natural or accidental formation. Possibly the former variety belonged to tribes more advanced in art, or were the property of the officers and chieftains, while the latter may have been used by the soldiery or common people. When it is stated that they vary in length from 22 inches to very little more than 1 inch in length, some idea may be formed of the range through which this series of implements extends. Some are of the most elegant form, and highly polished; others are rude slate stones, having the general characters of a triangular shape, with a rounded point and a sharp cutting chisel edge. In most the edge is rounded, but in some it is also bevelled or cut off obliquely; in others, again,

* In order to render this Catalogue as generally useful as possible, the Rev. Samuel Haughton, Fellow of Trinity College, and Professor of Geology in the University of Dublin, has kindly lent assistance, and carefully examined and named each stone in the Collection,—thus attaching a double interest to this heretofore neglected department of ethnological science.

it is nearly square. Some are round, or almost round, in the body or handle; others oval; and many, particularly those of slate, are quite flat. In a few, the form resembles that of a human canine tooth, and in others it partakes of the broad-bladed axe, while several were apparently constructed to act as wedges. From the extreme regularity of outline, and diversity of shape, as well as the high degree of polish which several of these articles exhibit, great time and care must have been expended on their manufacture; but then it must be borne in mind, that at the period when they were in use, human time and labour, compared with such in the present day, were of little value. Moreover, they were to the ancients what metal tools are to the moderns.

Among the most remarkable peculiarities observable in examining these objects is the symmetry and precision with which they were given the requisite form, and the perfection of their polish when the stone was susceptible of such. When we reflect on the circumstances under which they were made, and consider that each of the finer kinds must have been broken from the selected rock, then hewn into the rough outlined form of the celt, afterwards given its peculiar cutting edge and point, and finally polished with infinite care,—the whole process being effected without the use of metal, but simply by the application of another stone,—our wonder and admiration are increased.

The hammers and axes, both of stone and metal, or the swords and daggers of more modern times, do not present greater diversity of size and shape than those stone implements denominated Celts, which are so numerous, that it would not be possible to illustrate all their forms by as many as twenty illustrations.

In size, the stone celt, with a few exceptions, varies from 6 to 8 inches in length, and in breadth from 2 to $3\frac{1}{2}$; the scale between which may be traced throughout the extensive collection in the Stone series. Its general figure and make is such as to give the heavy cutting blow of an axe, or

pick, and the smoothing or polishing effect of an adze or chisel. As the general type of the stone celt, of the best shape, the medium size, and bearing the highest degree of polish, the illustration here placed across the page, from No. 481, in

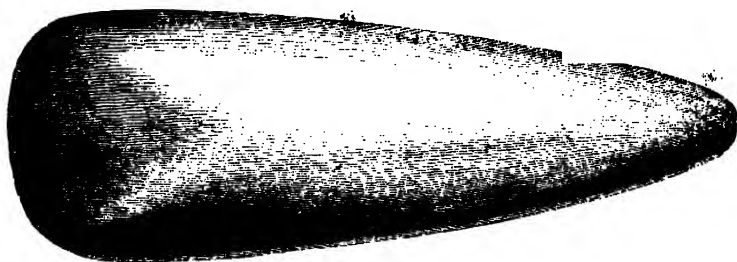


Fig. 37. No. 481.

Rail-case A, may be taken as an example. It is formed of flintstone, is $5\frac{1}{2}$ inches long, and 2 broad above the cutting-edge.

The accompanying illustration presents us with six celts, which represent the typical forms of this class of implements; they have been all drawn to scale, one-eighth the natural size, and are thus placed in juxtaposition to show their relative sizes, and to exhibit their respective forms and proportions.

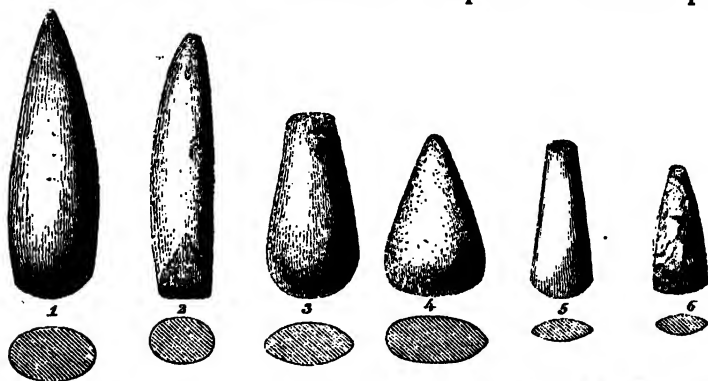
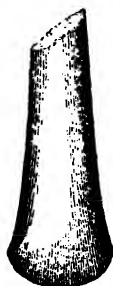


Fig. 38. No. 37. Fig. 39. No. 38. Fig. 40. No. 34. Fig. 41. No. 92. Fig. 42. No. 482. Fig. 43. No. 30.

portions. Fig. 38, which will be found on Tray T, No. 37, is an excellent example of the general character of the long, oval celt; it is 12 inches in length, and $3\frac{1}{2}$ wide at the thickest part; has a sharp, semicircular, but slightly oblique, cutting-

edge, and tapers to a rounded point at the upper end. This is one of the largest of the perfectly formed celts in the Collection; is composed of greenstone porphyry, and is highly polished on the surface. To this and each of the other figures a drawing in section has been appended. Fig. 39, which is $11\frac{1}{4}$ inches in length, by $2\frac{1}{2}$ broad, and also placed on Tray T, represents the long, narrow, rounded variety of celt, most of which have a chisel edge; it is of fine-grained sandstone. Fig. 40 is a good example of the purse-shaped celt (see Tray S, No. 34); it is composed of crystalline greenstone, highly polished; and is $7\frac{1}{2}$ inches long, and $3\frac{3}{4}$ broad. It and the following (Fig. 41) materially differ from the preceding, in having the widest part below at the cutting edge; whereas in the two previous examples it is about midway upon the length of the implement. Fig. 41 represents the triangular or heart-shaped celt, $6\frac{1}{2}$ inches long, by 2 thick, and $3\frac{1}{2}$ broad (see Tray W, No. 92). It is formed of crystalline greenstone, and may be considered rather a rare variety. Fig. 42 is one of the most elegantly formed and highly polished celts in the Collection (see No. 482 in Rail-case A). It is composed of compact greenstone; is $6\frac{1}{2}$ inches long, and $2\frac{3}{8}$ broad at the widest portion, and was found in the county of Armagh. The sixth variety, Fig. 43, of flint, $5\frac{1}{4}$ inches long, will be found on Tray N, No. 30 (see p. 29). But, beside all these typical forms under which the great bulk



of the celts in the Collection may be classed, there are others which form exceptions thereto; and of these, by far the most remarkable are three very large, but imperfect stone implements, of which the accompanying illustration, Fig. 44, drawn from No. 136, on Tray Y, and one-eighth the natural size, affords us a very tolerable idea (see p. 58). In material it is a highly siliceous porphyritic fel-

Fig. 44. No. 136. stone, with minute particles of hornblende, weathering white, or drab colour. This is $10\frac{1}{2}$ inches long, and $4\frac{1}{8}$ wide at the broadest portion; but there can be little doubt that two

of these three large celts are now imperfect. They were found under the root of a large tree of bog-deal in the bog of Canrower, near Oughterard, county of Galway.

The largest celt yet discovered in Ireland is that attached to Tray FF (see No. 323), and formed of coarse clay-slate. It is

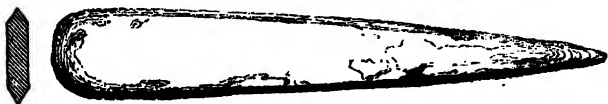


Fig. 45. No. 323.

about 22 inches long, and $3\frac{3}{4}$ broad at the widest portion; but it is only 1 inch thick; the arras has been removed on the edge, as shown by the diagram of its section. It might have been intended as the coulter of a plough for soft ground, but bears no evidence of ever having been so employed. This beautiful specimen was found in deepening the bed of the river Blackwater, two miles below Charlemont, county of Armagh.

As the celt was the principal tool and weapon, serving the purpose of the chisel, pick, punch, wedge, plane, hatchet, and battle-axe, among the early Celtic inhabitants of this

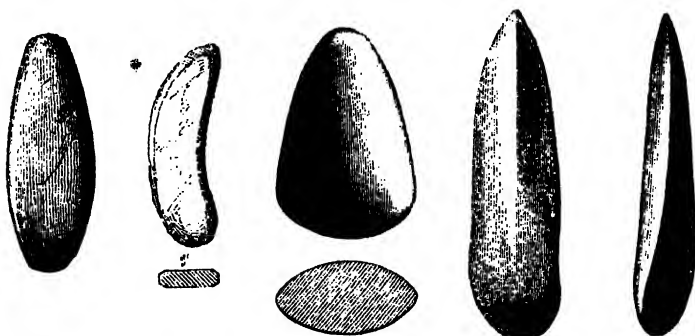


Fig. 46. No. 24. Fig. 47. No. 48. Fig. 48. No. 97. Fig. 49. No. 9. Fig. 50. No. 124.

island, so it was modified to meet a variety of purposes, and has been shaped even to resemble that of the knife or dagger; in illustration of which the above five figures are given. In Fig. 46, we find a remarkable and rare form of chisel-shaped celt (see Tray P), here drawn one-fourth the natural size. It

is $4\frac{1}{2}$ inches long, and $1\frac{1}{2}$ wide at the broadest portion, and is formed out of dark shale. The second cut, Fig. 47, Tray **U**, No. 48, one-eighth the natural size, is a curved shale celt, $\frac{3}{4}$ ths of an inch thick, and formed out of a natural nodule; it is $8\frac{1}{2}$ inches long, and $2\frac{1}{4}$ broad. Fig. 48, on Tray **X**, No. 97, is the most perfect and beautiful example of the ovoid celt in the Museum, being in every point of view singularly symmetrical: it is highly polished, composed of dark, compact greenstone; is $4\frac{1}{4}$ inches long, by $2\frac{5}{8}$ broad, and $1\frac{3}{8}$ thick, and here represented one-fourth the natural size. It resembles more the war celt than the tool. It was found in the Keelogue ford, and forms a striking contrast in shape and material to the rude shale celts obtained from that and the other passes of the Shannon, and described at page 48. The fourth cut, Fig. 49, placed on Tray **O**, No. 9, among the stone weapons, may be denominated the dagger celt, being shaped like that weapon at one end, and presenting the usual celt edge at the other, but it is rather thinner than most celts. It is $6\frac{1}{2}$ inches long, and $1\frac{1}{4}$ broad, and formed of hard, siliceous sandstone. Fig. 50, one-fourth the natural size, represents the tooth-shaped variety of celt, of hornstone, and is 6 inches long. There are but eight of them in the Collection; six of which will be found on Tray **V**.

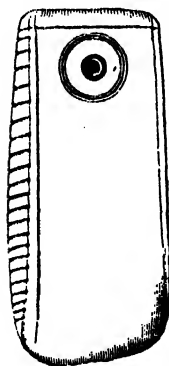


Fig. 51. No. 483.

In a few rare instances, small spear-shaped or chisel celts have been found perforated, as if for attaching to a string. There are three such to be seen in Rail-case A. That here represented in outline, one-half the original size, is a good example of this variety, and also exhibits some decoration on its edge and sides.* This is the only specimen

* Perforated chisels or celts are very rare in Ireland, but some have been found in Denmark and Sweden. See Nilsson's *Skandinaviska Nordens Ur-Inväpnare, ett försök i Komparativa Ethnografien*. Lund, 1838-1843, Pl. I. Fig. 17. See also Worsaae's *Illustrations of the Copenhagen Museum*, p. 11, Figs. 13 and 14.

of a decorated celt in the Museum; but in the same case will be found a middle-sized celt of green felstone, fine-grained, weathering white, stained a bluish-colour, and marked with lines and scratches resembling, at first sight, Ogham characters. The Rev. Dr. Graves, who has paid great attention to that form of writing, considers that they do not constitute any real inscription; moreover, they are decidedly of recent formation, being cut in through the blue colour with which the surface of the celt has been stained, and which appears to be indigo. It is well known that weavers, in the north of Ireland, used a smooth celt, whenever they could find one, for rubbing on the cloth, bit by bit, as they worked it, to close the threads, and give a gloss to the surface. This indigo stain was, in all probability, thus obtained in working what is called linsey-woolsey, and the marks must have been put on subsequently.

In concluding the description of the forms and sizes of celts, the accompanying illustration, figured the natural size, presents us with the smallest celt belonging to the Collection, and which is probably one of the least which has yet been discovered in this country (see No. 196, Tray **AA**).

From their great diversity in shape and size, one is led to regard these stone celts more in the light of tools than weapons, although the larger ones may, no doubt, have served the double purpose; and therefore they may be regarded as *Weapon-tools*. War must, however, be a secondary object to man, and all the appliances thereof subsidiary to his physical wants and comforts, even in the rudest states of society. That the stone celt was originally a hand tool, chiefly used with the hatchet or chisel-edge downwards, seems to be the accepted opinion. Subsequently the large celt appears to have been fixed in a cleft stick, or enclosed within the folds of a tough, slender branch. But, besides the

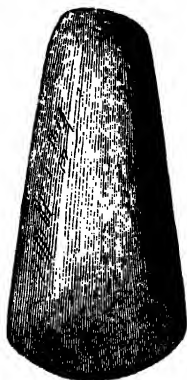


Fig. 52. No. 196.

ingenious conjectures of antiquaries as to how they were actually used, we are here assisted by the double evidence of analogy and fact, for the stone celt, so handled, is still in use in several other portions of the world, particularly New Zealand, some of the South Sea islands, and along the borders



Fig. 53.

of Nootka Sound. Some years ago an implement of this kind was discovered in the county of Monaghan, with the wooden handle, apparently of pine, $13\frac{1}{2}$ inches long, attached,—as shown by the annexed engraving, copied from the full-sized drawing in the Academy's Museum.* It is said that when the Breton peasant finds a celt, called in most countries on the Continent a "thunder-stone," he places it in the cleft of a growing branch or sapling, and leaves it there until the wood has formed and hardened round it; but this must have taken a great length of time. We do not, however, find the slightest trace or mark of such a handle on a single celt in this Collection.

As in the flints, so with the celts, a careful examination of the different imperfect or uncompleted specimens enables us to form a very good idea as to the mode and process of their manufacture. The stone having been determined upon, it was roughly hewn into a shape approaching the required form, as may be seen by examining the specimens on Tray Q. The next stage appears to have been that of giving it the sharp cutting-edge, so as to test the suitability of the material, its toughness, hardness, susceptibility of polish, and sharpness, before further time was expended upon it, or, perhaps, to render it immediately available. In some instances, however, it would appear that the final grinding or setting of the edge was not effected until after the instrument was polished, of which there is a notable example in

* See Mr. Du Noyer's description of Colonel Stewart's celt in the "Archæological Journal," vol. iv. p. 3.

No. 34, Tray T, and also in No. 13. The third step in the manufacture consisted in smoothing it longitudinally, by rubbing it upon a flat, curved stone. The effect of this part of the process was to give it the appearance of being planed into a number of faces, or surfaces meeting at obtuse angles. The accompanying illustration, from No. 13, Tray Q, shows this process in great per-



Fig 54. No. 13.

fection. In the Scandinavian Collection will be found the model of a large block of stone apparently used for sharpening stone weapons and tools. The fourth stage of the process appears to have consisted in rubbing the celt obliquely with another stone, so as to take off the angles or arrases formed by the foregoing, and giving it the appearance of having been rasped; traces of this part of the process may be seen on Nos. 32, 39, and many others. The fifth, and final stage, consisted in polishing the entire surface. Whether sand and water were used in any of the previous stages, and also as to how the final polish was given, are but matters of conjecture. This latter effect, however, fully equals, in a few specimens, anything which can be achieved in stone-polishing at the present day. Not the least worthy of admiration in several of these implements is the extreme precision and perfect symmetry of their outlines and proportions.

The foregoing observations refer to the better varieties of stone celts, which are indicative of considerable ingenuity in their makers; but there are a vast number chiefly formed of dark shale, which are comparatively rude, and do not exhibit anything like the same amount of workmanship as the former; the great majority of such were found in the fords of the Shannon, and have been placed in the Cross-case between Compartments 1 and 2. Whether they indicate a more primitive condition, or an inferior state of art existing

among a ruder people contemporaneously with tribes who possessed the means and ability of forming the more perfect descriptions of celt, are questions worthy of attention. In many instances the slate celt appears to have been manufactured out of the accidentally formed mass, as may be seen by specimens on Tray **U**, where No. 43 is typical of the ordinary variety of flat slate celts; it is 8 inches long, and $3\frac{1}{4}$ wide at the broadest portion. No. 45 is a unique specimen of its kind, nearly rectangular, 8 inches long by $3\frac{3}{4}$ broad, and $1\frac{1}{4}$ thick. No. 46 shows the double cutting edges similar to some of those on Tray **R**. It is $8\frac{1}{2}$ inches long, and 4 wide at the broadest portion.

The Academy is indebted to a Commission appointed for deepening and improving the navigation of the river Shannon, for the acquisition of more than one-half of the stone celts in the Collection. The discovery of these celts is thus described by Mr. Griffith, Chief Commissioner, in the second volume of the Proceedings of the Academy, p. 312:—

“The fords of Keelogue and Meelick, on the river Shannon, are the first points of the river passable except by boat, above the falls at Killaloe, and consequently the main pass between the counties of Clare and Galway with Tipperary and the King’s County. For the improvement of the navigation it was necessary to deepen the river at Keelogue ford, by excavating its bed to the depth of six feet below the bottom. The contractors dammed off a portion of the river, 100 feet in width, and 700 in length. The material to be excavated consisted, at the top, of two feet of gravel, loose stone, and sand; and at the bottom, of four feet of a mass composed of indurated clay and rolled limestone, which in some parts was found to be so solid and compact that it became necessary to blast it with gunpowder. This is a part of one of the Eskers which cross Ireland, and intersect the river at this point. In excavating in the loose material of which the upper two feet was composed, a considerable number of ancient arms, consisting of bronze swords, spears, &c., were found. Towards the lower part of the upper two feet were discovered a great number of stone hatchets (celts), similar in many respects to those which have been frequently met with in different parts of this country. The greater

number of them, which are black, are composed of the siliceous rock called Lydian stone, which is abundant in the neighbourhood of Keelogue and Banagher; but the others are composed of a sub-crystalline and apparently igneous porphyritic rock, none of which occurs in the neighbourhood, or, possibly, in the south of Ireland. Hence it is probable that the latter, which are much more perfectly executed than the black, were brought from a distance. These antiquities are evidently the relics of very different and probably distant periods. Owing to the rapidity of the current at Keelogue Ford, the annual increase of deposit must have been inconsiderable; "hence, though not more than one foot of silty matter may be found between the stone weapons of a very remote age, and the swords and spears of another period, still remote from us, yet centuries may have intervened between the periods of mortal strife which must have taken place in the river, probably between the Leinster-men and Connaught-men of old, disputing the passage of the river, at two distinct and, no doubt, very distant periods."*

The fact of finding so large a collection of these in a river ford favours the idea of their having been used as weapons as well as tools. With such a tool, assisted by the application of fire, uncivilized tribes of the present day can fell the largest tree by alternately charring and hewing; and by the same process they can shape it externally, and excavate it internally, into a boat or canoe,—a step in art which, in a country like Ireland, abounding in wood and water, must soon have suggested itself to the ingenuity and energy of its early Celtic people. The celt could be employed as a wedge; but even the largest of them might with facility be used with the hand as chisels or adzes, upon soft, newly-felled timber, and both ends might be used by the same worker, one for roughly picking, the other for clearing out. The celt would also prove a

* In the top shelf of the Cross-case, between the first and second Compartments, will be found two Trays, **HH** and **II**, containing, in addition to those already specified or distributed throughout the Collection, specimens of both kinds of celts discovered in the bed of the Shannon.

serviceable tool in mining operations, and remains of such have been found in ancient mines, especially in the neighbourhood of Killarney.

COMPARTMENT I.—SHELF II., *Tray Q*, contains thirteen rude, unfinished celts, in the first stage of manufacture, consisting chiefly of trap rock. Nos. 1 to 5, averaging 4 inches in length, have the cutting edges smoothed and formed, but the rest of the implement only rudely chipped, except No. 4, which is more perfect. Nos. 6 and 7 are merely chipped into shape, but show no smoothing whatever. No. 8 has only the edge finished; the remainder is rough. Nos. 9 and 10 are small celts, nearly perfect. No. 11 is $8\frac{1}{2}$ inches long; perfect at the cutting end, but unfinished above. No. 12 is a fragment. No. 13, of felstone, figured at p. 47, is one of the most remarkable objects of its class in the Collection, being $13\frac{1}{4}$ inches long by $3\frac{3}{4}$ broad, and showing the process of smoothing from end to end, probably by rubbing on a curved stone. It was procured from the parish of Desertmartin, county of Derry.

Nos. 1 and 9 are mottled greenstone schist; No. 2, dark syenite; No. 3 is shale. It and 9 were procured from the county of Antrim. Nos. 4, 8, and 12, are varieties of greenstone, and were—*Presented by Lord Farnham*. No. 5 is trappean ash. Nos. 6 and 7, mottled greenstone. No. 10, fine crystalline dark greenstone. No. 11, of green whetstone, was—*Presented by Arthur R. Nugent, Esq.*

SHELF II., *Tray R*, contains sixteen well-formed celts, numbered from 14 to 29, of the usual type, and varying in length, from No. 21, which is $7\frac{3}{4}$ inches, to No. 29, which is $4\frac{3}{4}$ inches. Nos. 19 and 20 exhibit red marks of lichen, which show that they were exposed to the action of fresh water, and that they were not totally imbedded in mud or gravel. These specimens present great variety on the cutting-edge, some being nearly circular (as 22 and 26), others oblique (as 17, 19, 27, and 28), while Nos. 14, 20, and 25, form segments of two circles meeting in the centre. No. 18, of fine crystalline syenitic greenstone, was—*Presented by Lord Farnham*. The remainder, except No. 27, were—*The gift of the Shannon Commissioners*.

Nos. 14, 17, 22, and 27, are composed of siliceous whetstone. No. 15 is pale green grit, weathering white. No. 16, mottled com-

pack grit. No. 19, porphyritic greenstone. Nos. 20 and 25 are mottled greenstone schist. No. 21, dark crystalline greenstone. Nos. 23 and 28, shale. No. 24, green flinty slate. No. 26, hornblendic syenitic greenstone. No. 29, finely crystalline greenstone.

SHELF II., *Tray S*, numbered from 30 to 36, contains seven celts of the massive, broad-headed character, three of them being—together with Nos. 13, 320, and 323—the largest in the Collection. No. 30 is $10\frac{1}{2}$ inches long, and $4\frac{3}{4}$ broad, of siliceous felstone, sharp at the edge, and most accurately smoothed. No. 31 is $11\frac{1}{2}$ inches long, and 5 broad, of the same character, colour, and stone as the former. No. 32 approaches the round-middled variety in shape, and is more elegant in contour than any of the previous long specimens: it is 11 inches in length, 4 broad, and $2\frac{5}{8}$ thick; it is also of felstone, and shows the peculiar oblique rubbing, as if it had been filed upon the upper two-thirds, perhaps to take off the planing appearance shown on No. 13; but the lower third is perfectly smooth, and the edge as sharp as a metal axe. No. 33, of siliceous basalt, is only $5\frac{3}{4}$ inches long, and 3 broad, but is of the same type as 30 and 31. No. 34 (Fig. 40, p. 41) is a very remarkable specimen, in having a much more circular end than any of those hitherto examined and from the peculiarity of its not being brought to a sharp edge, but ground off flat or square; this latter, added to the fact of its exhibiting some of the original flaws in the stone towards the upper portion, shows that it was only in process of manufacture; it, together with the two following, is of crystalline greenstone. No. 35 is 7 inches long, and tapers more than any of the foregoing, being 3 inches wide at the cutting-edge, and but $1\frac{3}{4}$ at the round top. No. 36 is 6 inches long, and $3\frac{1}{2}$ broad; it shows the same flattened edge as No. 34, and has a longitudinal ridge on the side, similar to No. 13. Nos. 30 and 31 were found at Baysrath, county of Kilkenney, and were procured with the Dawson Collection. No. 32 was found in Monmunny bog, parish of Ahavea, county of Fermanagh, and was—*Presented by the Rev. G. Sidney Smith, D.D.*

SHELF II., *Tray T*, holds six celts of the long and round character, from Nos. 37 to 42. No. 37 is the most perfect and beautifully formed of its variety; it is 12 inches long, swelling in the round centre to $3\frac{3}{8}$ inches in width, and tapering to either end, being but 3 inches broad where the cutting-edge joins the shaft, and 1 inch broad within

half an inch of the round top. It is composed of greenstone porphyry, and is engraved as Fig. 38, on page 41. It was found four feet under the surface, in the new cut of the Brosna drainage, near Clara, King's County, and was—*Presented by the Board of Works*. No. 48, of fine-grained sandstone, is a curved celt, similar in shape to No. 23 of the chisels, Tray O; it is 11 inches long, and $2\frac{5}{8}$ broad in the middle, but tapers to $2\frac{1}{4}$ immediately above the cutting-edge; it is the second figure in the typical illustrations at p. 43. No. 39, of coarse felstone, is $9\frac{1}{2}$ inches long, and partakes more of the usual conical celt-shape than either of the former, being 3 inches broad above the cutting-edge; it also swells slightly in the middle. It has been worked quite rough, as if picked or rasped all over, except at the cutting-edge, which is smoothed with great care and precision. No. 40 is of the same variety and material, $9\frac{3}{4}$ inches long, and $3\frac{3}{8}$ broad; it is rough all over, and, if ever polished, the air or water has acted upon it, and given it the present surface. No. 41, of honestone, is $9\frac{1}{2}$ inches long, and $2\frac{3}{4}$ broad at the widest part. No. 42 is of basalt, weathered, $8\frac{1}{2}$ inches long, and $2\frac{3}{8}$ broad at the widest part; it is nearly circular in the shaft, very rough on the surface, and has no cutting edge. Nos. 38 and 42 are from the parish of Tamlaght-o-Crilly, county of Derry. No. 40 was found in the Bog of Allen, and—*Presented by — Bury, Esq.* No. 41 was found in the excavations in the gravel bed of Portna shoal, river Bann, on the Antrim side, and—*Presented by the Board of Works*.

SHELF II., Tray U, contains thirteen celts, from 43 to 55, of the flat and irregular-shaped varieties, and all formed of dark shale, passing occasionally into clay ironstone; in size they vary, from No. 46, which is $8\frac{3}{4}$ inches long, and 4 wide at the broadest part, to No. 51, which is but $5\frac{1}{4}$ inches long, and $2\frac{1}{2}$ broad. Nos. 45 and 46 may be taken as the types of the class of irregular celts; being the exceptions to the rule of the general form. They were, probably, stones previously so formed by nature, and taken advantage of by the celt-maker (see p. 48). All these celts were found in the Shannon fords, and are every way inferior both in shape and material to those of a better class of material. Nos. 43 to 46, and 54, were found in 1843, in the site of the works on the river Shannon, at Athlone, and were, with all others on this Tray—*Presented by the Shannon Commissioners*.

* SHELF I., Tray V, contains twelve well-formed celts, numbered from 56 to 67; the upper row, of short hand celts, the lower containing the long variety. No. 56 is greenstone, round-edged, blunt-topped, slightly imperfect, $4\frac{1}{2}$ inches long, by $2\frac{3}{8}$ broad. No. 57, of coarse greenstone, pockmarked from weather action, rather round in handle, slightly broken at top, is $5\frac{3}{8}$ inches long, by $2\frac{1}{2}$ broad. No. 58, a perfect specimen in all respects, composed of crystalline greenstone, oval in section, widest in the middle, is $3\frac{1}{2}$ inches long, and $2\frac{1}{2}$ broad; procured from the county of Down. No. 59, of greenstone porphyry with pink felspar, perfect, except at edge, $5\frac{3}{8}$ inches long, and $2\frac{1}{2}$ broad. No. 60, a massive, broad celt, perfect of its kind, of greenstone, but much weather-worn, slightly oblique at cutting-edge, broadest below the middle, tapers to both extremities, with very round top; is $5\frac{1}{2}$ inches long by $3\frac{1}{4}$ broad. No. 61, also of greenstone, much weather-worn; an ordinary-shaped small celt, $4\frac{3}{4}$ inches long, and $2\frac{1}{2}$ wide. No. 62, a long, round celt of greenstone porphyry with pink felspar, slightly imperfect at the top and cutting-edge, thickest in the middle, and tapering to both extremities, is $8\frac{3}{8}$ inches long by $2\frac{7}{8}$ broad. No. 63, a very perfect specimen, but much weathered upon one side, top rounded; dimensions, 8 inches by $2\frac{7}{8}$; composed of syenitic greenstone; is said to have been found near the Giant's Grave, in the townland of Kilhoyle, parish of Balteagh, and county of Derry. No. 64 resembles in form No. 62, and is, like it, composed of greenstone porphyry, but differs slightly from the former in the colour of the felspar, which is white instead of pink; it is thickest in the middle, where it is $2\frac{3}{4}$ inches wide; tapers to the top, and also to the cutting-edge, which is $\frac{7}{8}$ ths of an inch less than the centre. This beautiful celt, which is $8\frac{1}{2}$ inches long, affords proof that the celt-maker employed similar materials to produce similar forms; it was found in deepening the fords of the Shannon, and forms a striking contrast, both in material and shape, to those rude, flat, short specimens that form the great bulk of the stone implements brought to light by those excavations. It was—*Presented by the Shannon Commissioners*. No. 65 is slightly imperfect at the top and surfaces; side-edges squared; cutting-end oblique; composed of felstone schist, with hornblendic streaks, a rock common in the south-west of Ireland. It is highly polished, although not quite perfected in out-

line, and appears as if it had been long in use, and much handled. No. 66 is a very pretty specimen of crystalline greenstone, $7\frac{1}{2}$ inches long by $2\frac{1}{2}$ wide; angular in shape, with cutting-edge oblique, but slightly imperfect, as if not quite finished. This celt was found in the county of Derry. No. 67, a very perfect specimen of the massive kind, and very similar in character to No. 58, is $7\frac{3}{8}$ inches long by $3\frac{1}{4}$ wide in the middle; it is composed of fine-grained greenstone porphyry,* and was received from the townland of Lismoyle, parish of Desertoghill, and county of Derry.*

SHELF I., *Tray W*, contains twenty-nine celts, from No. 68 to 96, of two varieties, but all more or less triangular, and consisting of two rows of small ones, and a row of long massive specimens at the bottom. Nos. 68 to 71, 75, 82 to 85, 88, and No. 92, may be specified as good examples of the triangular celt. The latter is given as the type of this variety, Fig. 41, p. 41. No. 68 is a small celt of shale, from the coal-measures, $3\frac{1}{2}$ inches long, by $1\frac{3}{4}$ wide. No. 69, of crystalline greenstone schist, $3\frac{1}{4}$ inches long, by $2\frac{1}{4}$ broad, is from the county of Derry. No. 70 is of shale, approaching clay-ironstone; square-edged, $3\frac{1}{4}$ inches by $1\frac{7}{8}$; from Castledawson, county of Derry. No. 71 is of crystalline greenstone, similar in size. No. 72, of greenstone, a small, long, and narrow celt, imperfect at the edges, 4 inches by $1\frac{5}{8}$, is from the county of Tyrone. No. 73, of shale, bevel-edged, is $3\frac{3}{4}$ inches by $1\frac{3}{8}$. No. 74 is crystalline greenstone schist, $3\frac{3}{4}$ inches long by $1\frac{7}{8}$ broad; and No. 75 is fine-grained crystalline greenstone, triangular in shape, and $3\frac{3}{4}$ inches long by $1\frac{7}{8}$ wide. This and No. 87 are from the parish of Rasharkin, county Antrim, from which locality many specimens of flint and stone tools and weapons were procured by the Academy, chiefly along with the Dawson Collection. No. 76, a small celt, approaching the tooth-shape (Fig. 50, on p. 43), flat on one side, round on the other, is $4\frac{1}{2}$ inches long by $1\frac{1}{2}$ broad; edge slightly oblique; composed

* In the Donation Book, and also in the Proceedings for 25th January, 1841, we find an entry of—"A large collection of miscellaneous antiquities, consisting of stone, flint, bronze, and iron instruments, coins, &c.; presented by Captain (now Colonel) Portlock, M. R. I. A." There is reason to suppose that many objects in the flint and stone collection are those alluded to in that presentation; but when the arrangement and cataloguing of the Museum were commenced, the writer was unable to identify any of these specimens.

of crystalline greenstone, mottled with pink felspar. No. 77, mottled crystalline greenstone, $4\frac{1}{8}$ inches by $1\frac{5}{8}$. No. 78, broad and flat, $4\frac{1}{4}$ inches by $1\frac{7}{8}$, of light-coloured crystalline greenstone. No. 79, a very small, flat, triangular celt of siliceous clay-slate, $3\frac{1}{4}$ inches by $1\frac{5}{8}$. No. 80, a peculiarly-shaped triangular celt, of mottled schist, slightly imperfect, quite flat on the under side, $3\frac{3}{8}$ inches long by $1\frac{1}{2}$ broad. No. 81, a small tool-celt of shale, $3\frac{3}{4}$ inches long, by $1\frac{3}{8}$ broad in the middle. No. 82, of the same material, but a little larger. No. 83, of siliceous clay-slate, imperfect at top, $4\frac{1}{8}$ inches by $2\frac{1}{8}$. No. 84, a perfect celt, of felstone, $4\frac{1}{2}$ inches by $2\frac{1}{4}$, round-edged, sharp at top. No. 85, a good example of the small triangular celt, similar in form to No. 92, is $4\frac{1}{2}$ inches long by $2\frac{1}{2}$ broad, and composed of crystalline greenstone, but much pockmarked by weathering. No. 86, of shale, an ordinary short celt, $4\frac{5}{8}$ inches by $2\frac{1}{2}$. No. 87, shale, 5 inches long by $2\frac{1}{2}$ broad, is square on right-hand edge, and shows the rasping process on its flat surface. No. 88, a very perfect small celt, polished on the flat, but rough on the side-edges, $4\frac{3}{8}$ inches long by $2\frac{3}{8}$ wide in the middle; of mottled crystalline greenstone, weathering white. No. 89, a well-smoothed celt, approaching the tooth-shape, round at top, 5 inches long by $2\frac{1}{2}$ broad; of fine greenstone. No. 90, a massive celt, of very crystalline greenstone, $7\frac{1}{4}$ inches long by $3\frac{7}{8}$ broad, and $1\frac{3}{8}$ thick, rounded at the top, blunt at the edge. No. 91, also of crystalline greenstone; a punch-shaped celt, very round at the bottom, and blunted at the top, as if by hammering; is $6\frac{3}{4}$ inches long, $3\frac{1}{2}$ broad, and $2\frac{1}{8}$ thick; much pitted on the surface. No. 92, the triangular celt, figured at p. 41 as the type of its class, is $6\frac{1}{2}$ inches long, $3\frac{7}{8}$ wide, and 2 thick. This very beautiful specimen, like the two foregoing, is of crystalline greenstone, and was found in the castle of Confey, near Killeshandra, county of Cavan. No. 93, an imperfect specimen, 6 inches long, and $3\frac{3}{8}$ broad, is formed out of fine-grained hornblende rock, being the first specimen of that stone met with among these objects. No. 94, triangular, of shale, 5 inches by $3\frac{1}{4}$. No. 95, a triangular celt of pale shale, 5 inches by $3\frac{1}{2}$. No. 96 is 6 inches long, by $2\frac{1}{4}$ broad, a chisel-shaped celt, flat, angular at side-edges, and formed out of a nodule of shale.

Nos 73, 74, 76 to 80, 82, 86, 89, and 93, were found in the fords of the Shannon, and were—*Presented by the Shannon Commissioners.*

THIRD COMPARTMENT.—SHELF II., Tray X, contains twenty-four small celts of either the round or the long character, from No. 97 to 120; the two upper rows are small specimens, illustrative of the former; and the bottom row affords eight objects characteristic of the latter description. Nos. 97 and 106 are of a peculiar ovoid form, and may be considered as types of the small round celt, while Nos. 116 and 117 illustrate the long variety. No. 97, one of the most perfect and beautiful specimens in the Collection,—of dark, fine-grained, compact greenstone, $4\frac{1}{4}$ inches long, by $2\frac{5}{8}$ broad, and $1\frac{1}{2}$ thick, is figured on p. 43, Fig. 48. No. 98 is of the same variety, but smaller, and not so perfect;—of highly crystalline greenstone, $3\frac{1}{2}$ inches by $2\frac{1}{4}$. No. 99, of syenite, square at edge, round at top, but more truncated than 97, is $3\frac{3}{4}$ inches by $2\frac{1}{2}$. No. 100, of fine-grained syenite or crystalline greenstone, 4 inches long, by $2\frac{1}{2}$ above the cutting-edge, partakes of the triangular form. No. 101, of the same material, $4\frac{1}{2}$ inches long, by $2\frac{1}{4}$, semicircular in edge; procured from the county of Down. No. 102, of syenite, triangular, but more massive than the foregoing, is $4\frac{1}{2}$ inches by $2\frac{1}{2}$; top round, but not pointed. No. 103, of dark hornblendic greenstone, 5 inches by $3\frac{1}{2}$; edge slightly oblique. No. 104, of gray grit, $2\frac{7}{8}$ inches by $1\frac{5}{8}$; oblique-edged; not likely to have been inserted in a stick, and used as a weapon, but may have been fastened into a horn or bone handle. No. 105, of siliceous whetstone, $3\frac{3}{8}$ inches by $1\frac{7}{8}$; its top is sharp-edged, as No. 107, its sides flat. No. 106, of similar material; a very beautiful specimen of the ovoid class, but slightly imperfect at top; its length is $3\frac{3}{8}$ inches by $1\frac{7}{8}$; edge remarkably sharp, and more circular for its size than any in the Collection, extending over one inch of the entire length. No. 107, of pale whetstone; found in the King's County; $5\frac{1}{8}$ inches by $2\frac{1}{8}$, cutting-edge very oblique, top quite sharp, and suited for cutting, like the usual lower edge; side-edges flat, as No. 105. These two, Nos. 105 and 107, show that the same varieties of celts were made out of similar stones. No. 108, of green grit, $3\frac{3}{8}$ inches by $1\frac{7}{8}$; has the edge oblique, and the top quite round and polished, like No. 97. No. 109, felstone, light drab-coloured; length $3\frac{3}{4}$ inches by $1\frac{1}{4}$. No. 110, of fine-grained, mottled, siliceous slate, is $3\frac{5}{8}$ inches long, by $2\frac{1}{4}$ broad, but imperfect. No. 111, of very fine-grained crystalline greenstone, and partaking of the slate-celt character, $3\frac{1}{2}$ inches by 2. No. 112,

of light-coloured honestone, $3\frac{1}{4}$ inches by $1\frac{3}{4}$, is triangular in shape.

The lower row consists of eight long celts. No. 113, of hornblende greenstone, $6\frac{1}{4}$ inches by $2\frac{3}{4}$, from the county of Derry, shows the effects of great exposure. No. 114, of coarse sandstone, $5\frac{1}{2}$ inches by $2\frac{3}{4}$; a very remarkable specimen, resembling, in some respects, the tooth-shaped, but apparently, from one of two circumstances: it was either originally a larger celt, and was broken off obliquely, or, a flaw having been discovered in the stone by the maker, he endeavoured to work it out by rubbing, and so rendered it slightly concave on that side; the imperfection may be seen above the lower wire. It is altogether a rude specimen, as might be expected from the material. No. 115, of syenite, $6\frac{3}{8}$ inches by $3\frac{1}{4}$, has the cutting-edge very round. No. 116, of felstone, from Knocktopher, county of Kilkenny, 5 inches by $1\frac{3}{8}$, having a sharp chisel-edge, is a good specimen of the long celt, like No. 37, but of smaller variety. No. 117, of coarse gray sandstone, $5\frac{1}{8}$ inches by 2, same variety as former, but more circular at edge, from which it tapers to a very small point. It was found near the tumulus on Killiney Hill, county of Dublin, and was—*Presented by the Rev. W. Wildbore*. No. 118, of sandstone, is $4\frac{3}{8}$ inches by 2. No. 119, crystalline felstone schist, $4\frac{1}{2}$ inches by 2; of the round character, with semicircular cutting-edge; from Baysrath, barony of Knocktopher, county of Kilkenny. No. 120, of crystalline greenstone, with green hornblende and pink felspar, $4\frac{1}{2}$ inches by $2\frac{1}{2}$; triangular, with oblique edge.

No. 97 was found in the bed of the Shannon, at Keelogue, and was, with Nos. 104 and 110—*Presented by the Shannon Commissioners*. Nos. 99, 100, 106, 108, and 111, were—*Presented by Lord Furnham*; and No. 120, by *the Representatives of Leslie Ogilby, Esq.*

SHELF I., Tray V, contains sixteen celts and celt-shaped objects, from No. 121 to 136. The two top rows consist of eight tooth-shaped celts, the type of which variety is No. 124, Fig. 50, at p. 43. No. 121, of metamorphic schist, is 6 inches long, by $2\frac{1}{4}$ wide, and presents the rounded back. No. 122, of a like character and material, and similarly placed, is $4\frac{1}{2}$ inches by $1\frac{3}{4}$; it was found in Portna Shoal. No. 123, of shale, 5 inches by $1\frac{7}{8}$; was found near Oughterard, county of Galway; it and the following are placed on the rounded backs, so as to show the under flat surface. No. 124, of

hornstone, figured at page 43 as the type of this variety, is 6 inches by $2\frac{1}{4}$. No. 125, of common slate, is a small, perfect specimen, 4 inches long by $1\frac{5}{8}$ broad, from the county of Down. No. 126, of pale hornblendic schist; a small, but perfect specimen, is $3\frac{7}{8}$ inches long, by $1\frac{5}{8}$ wide. No. 127, of siliceous basalt from the county of Antrim, highly polished, and placed with the flat surface exposed; measures $4\frac{1}{2}$ by 2 inches. No. 128, of whetstone, placed on the flat surface; is $4\frac{3}{8}$ inches long, by $1\frac{1}{2}$ wide. No. 129, the handle of a celt-shaped implement, of fine-grained doleritic trap, hornblende predominating, $7\frac{1}{4}$ inches long by $2\frac{5}{8}$ wide; oval in section, and imperfect at both extremities. No. 130, the dimensions of which are $1\frac{7}{8}$ inches long by $2\frac{3}{8}$ wide, is an imperfect and very flat and thin celt-shaped piece of slate, apparently about a third of the original. No. 131 is a remarkable short, thin celt, of shale, evidently intended as a tool; flat at the upper straight edge, $2\frac{7}{8}$ inches deep, and 3 across the widest part. No. 132, the fragment of a celt, $3\frac{1}{4}$ inches long, by $2\frac{1}{8}$ wide, composed of mottled felstone. No. 133, the fragment of a flat, fish-tailed celt, 3 inches long, by $2\frac{7}{8}$ ths wide, somewhat similar in shape to No. 130, and showing a beautiful greenish-white crystalline surface. The following is the mineralogical result of Professor Haughton's analysis of this rare specimen:—"It is composed of albite, or soda felspar, 86·43, and lime augite, 13·57 parts, and also contains lime and iron garnet as an accidental mineral. This rock is not known to me as Irish, and is not a common rock anywhere; but I have seen specimens of it in Switzerland, and I should not be surprised to hear that it exists *in situ* in the county of Donegal."

At the bottom of this Tray are placed three very peculiar celts (see p. 42), and differing altogether in shape from any implements of this variety in the Collection. They are flatter and broader than any other specimens which have yet been discovered, in which respect they resemble the bronze or iron hatchet. They are formed out of highly siliceous greenish-gray felstone, the two latter porphyritic, weathered on the surface to a drab colour, and highly polished. No. 134 is 8 inches long by 4 broad in the blade, and measures $1\frac{3}{8}$ inches in thickness at the upper end, which is oval. At first sight they appear fractured or unfinished at the upper end or handle; but although two of them are evidently broken off

obliquely, this one has been smoothed down, and has a cross notched upon it. This end, however, compared with the perfection, shape, and high finish of the rest of the implement, does not appear to have been the original termination, but was smoothed down and notched after it had been injured. The ends of each have been weathered, or acted on by the wet peat in which they must have remained for many centuries. No. 135 is similar in character to foregoing, but somewhat larger, and proportionally broader in the blade; it is $9\frac{1}{4}$ inches long, by $5\frac{3}{8}$ across the cutting-edge, and $1\frac{1}{8}$ thick. No. 136, given as Fig. 40, on p. 42, is $10\frac{3}{8}$ inches long, by $4\frac{1}{2}$ broad at the widest part, and $1\frac{1}{2}$ thick in the handle. These three matchless specimens were "found in the shallow bog of the townland of Canrower, near Oughterard, county of Galway, immediately under the root of a large bog-deal tree, or 'corker,' as it is called there, by a man named Naughton. Having dug round the root, he put his hand under it to raise it, and brought out these stone hatchets. Although several portions of the root have been cut away for firewood, the central mass still remains; the place abounds in bog timber." (Communication received from G. F. O'Flahertie, Esq., of Lemonfield, upon whose property they were found.) These are the nearest approach to stone axes for felling timber of any in the Collection.

Nos. 124, 126, 129, and 132 were—*Presented by the Shannon Commissioners*. No. 130 was found in the river Bann, on Toome Bar, Antrim side, near Toome Castle, about three feet under the surface, and was—*Presented by the Board of Works*.

SHELF I., Tray Z, contains eighteen different-shaped celts, from Nos. 137 to 154, chiefly of the long character, and most of which are slightly imperfect, apparently from natural deficiency in the stone, but which the maker endeavoured to rectify by rubbing down and polishing the surfaces, so as to take out the flaws. They have all been—*Presented by the Shannon Commissioners*. No. 137 is $8\frac{5}{8}$ inches in length, by $2\frac{3}{4}$ broad; it is shaped somewhat like No. 13, on Tray Q, showing several faces worked upon it. The cutting-edge is round and blunt, and the left side-edge flat. It and the three following are composed of felstone. No. 138 is $8\frac{1}{2}$ inches in length, by 3 broad. No. 139 is broad, imperfect at top, and exhibits several flaws; it is $6\frac{1}{2}$ inches long, by $3\frac{1}{2}$ broad. No. 140 is $6\frac{5}{8}$ inches long, by $2\frac{1}{2}$ broad, and shows several flaws not worked

out. No. 141, of red sandstone, $5\frac{1}{2}$ inches long, by 2 broad, is very irregular in outline, and rounded at top; this and the three foregoing were found at Keelogue. No. 142, composed of crystalline greenstone, with white felspar, is $5\frac{1}{2}$ inches long, by $2\frac{1}{2}$ broad, is broken at top, but has a very sharp and perfect cutting-edge. No. 143, long and triangular, defective on left side, 6 inches long, by $2\frac{1}{2}$ broad, tapering to $\frac{3}{4}$ ths of an inch; this and the following are of the same material as the foregoing. No. 144 is $7\frac{1}{2}$ inches long, by $2\frac{3}{4}$ broad, and remarkable for its crookedness and irregularity of surface on both sides, caused apparently by working out the flaws; edge slightly oblique. The lower row contains ten specimens. No. 145 is of the ovoid shape, like No. 97, on Tray X; it is $3\frac{3}{4}$ inches long, by $2\frac{1}{2}$ broad, is slightly imperfect at top, rounded at the cutting-edge, and composed of crystalline greenstone, with yellowish felspar. No. 146 approaches the chisel-shape, having straight side-edges, and a somewhat square cutting extremity; its dimensions are $4\frac{1}{2}$ inches long, by 2 broad, and its composition, felstone. No. 147 is a very short, broad celt of shale, $4\frac{1}{4}$ inches long, by 3 inches broad, squared and rubbed flat at the top (probably a broken specimen), with an oblique edge. No. 148, of crystalline greenstone, with white felspar, indented at sides to take out the natural flaws; its dimensions are $4\frac{1}{2}$ inches long, by 2 broad. No. 149, composed of coarse crystalline greenstone, $5\frac{1}{4}$ inches long, by $2\frac{3}{8}$ broad; side-edges flat, much flawed, apparently by the original hammering. No. 150, of mottled syenitic greenstone, $4\frac{3}{8}$ inches long, by $2\frac{1}{2}$ broad, much flawed, but, being of valuable material, an effort was apparently made to give it form. No. 151, flat, of shale, $4\frac{3}{4}$ inches long, by $2\frac{1}{4}$ broad. The three following specimens are more perfect of their kind than the foregoing, and present good examples of the better class of celts procured from the Shannon. No. 152, of fine-grained greenstone, long and narrow, $4\frac{3}{4}$ inches long, by 2 broad, with a very oblique edge, sharp-topped; has flat side-edges, nearly straight, prolonged into the cutting extremity, which they meet at a well-defined angle. No. 153 is broader than the foregoing, $4\frac{1}{4}$ inches by $2\frac{3}{8}$; sharp chisel-edged in the centre, but rounded off at the corners; composed of felstone, mottled with greenish-yellow felspar. No. 154, of the same material, with a narrow cutting-edge, slightly oblique, but unusually prolonged at the sides; its dimensions are $4\frac{1}{2}$ inches long, by $1\frac{3}{4}$ broad.

SHELF I., Tray AA, contains fifty-six small celts, numbered from 155 to 210, including the smallest form of weapons or weapon-tools in the Collection; but a careful examination of them will, we think, convince the inquirer that they were used as tools only. The two first rows are of the broad, flat character; several are imperfect, but vary in size from 3 to $2\frac{1}{2}$ inches in length, and in breadth from $2\frac{1}{8}$ to $1\frac{1}{2}$ inches. The third row contains nine celts of the long character, varying from No. 167, which is 4 inches long, by $1\frac{1}{2}$ broad, to No. 173, which is $2\frac{5}{8}$ inches long, by $1\frac{1}{4}$ broad; some of these are chisel-edged. The fourth row contains ten examples of the same form, but narrower; the dimensions of which vary from No. 183,—which is 4 inches long, by 1 inch broad, and presents a peculiar form of cutting-edge, somewhat between that of the chisel and the celt,—to No. 181, which is flat and oval, $2\frac{5}{8}$ inches long, by $1\frac{1}{4}$ broad. The fifth row consists of seven very small squarish celts, resembling those in the top row, but partaking more of the chisel than the celt character;—see especially Nos. 168, 188, and 189. No. 190, procured in the county of Down, is of whitish honestone. The sixth row contains ten of the smallest celts in the Collection. They are of the flat, round, and triangular shape; some are apparently chisels, and others minute celts. In length they vary, from No. 198,—which is of the long chisel character, nearly round in the shaft, and resembling those in the fourth row, $2\frac{3}{8}$ inches long, by $\frac{5}{8}$ ths of an inch in thickness,—to that numbered 197, the least in this row, and which partakes more of the chisel than the celt form; it is $1\frac{3}{8}$ ths of an inch long, and $\frac{5}{8}$ ths thick. No. 196 is that figured on page 45; it is a specimen of the smallest true celt in the Collection, not quite 2 inches long, and only $\frac{7}{8}$ ths of an inch in thickness at the broadest part. No. 193, on this row, is a perfectly triangular celt, but only $2\frac{1}{8}$ inches long, by $1\frac{1}{8}$ broad. The last row contains eight celts, all, with the exception of Nos. 205 and 206, of the very flat, thin character. They vary in size from No. 203, which is 2 inches long, by $1\frac{3}{4}$ broad, to No. 210, which is little more than 3 inches long, by $1\frac{1}{2}$ across.

As named by Rev. Professor Haughton, these specimens of celts and chisels may be arranged under the following heads. The type of the class is felspathic trap, variously streaked, and mottled with hornblende, as Nos. 157, 165, 167, 168–170, to 176, 178, 181, 185

to 189, 191, 192, 194, 195, 197, 198, 202, and 203. Some of these are finer-grained varieties than the others, as 158, 159, 161, 162, 164, 205, and 206. But the two first specimens on this Tray, 155 and 156, are composed of fine-grained siliceous basalt. Nos. 166, 200, 201, and 204, are also of siliceous basalt; No. 200 being of the fine-grained and pitted character. No. 160 is siliceous trap, approaching jasper. Nos. 163, 169, 177, and 196, are of amygdaloidal felspathic porphyry. No. 199 is of the same material, with red felspar. Nos. 179 and 210 are of shale, passing into Lydian stone. Nos. 182, 207, 208, and 209, are dark shale. Nos. 183 and 193 are felstones, the former gray. No. 184 is clay ironstone.

Nos. 160, 169, 171, 174, 177, 184, 195, 202, and 208, were procured from the county of Derry; Nos. 179, 190, and 210, from the county of Down; No. 183 from that of Armagh; No. 186 from Antrim; No. 187 from Donegal; and No. 188 from Tyrone. Nos. 155, 167, 180, 196, and 209, were—*Presented by the Shannon Commissioners*; and Nos. 168 and 199 by *Lord Farnham*.

SHELF II., Tray BB, contains thirty medium-sized and small celts, of either the long or oval character, extending from No. 211 to No. 240, and presenting a very interesting lithological collection. They vary in size, from No. 230, of felstone, $5\frac{1}{2}$ inches long, by $1\frac{1}{8}$ broad, to No. 237, a small celt, $3\frac{3}{8}$ inches long, by $1\frac{1}{8}$ broad, composed of felspathic trap, mottled with hornblende. The two first rows partake of the long and narrow character; the third, of the broad or triangular. Many of these celts, particularly Nos. 212 to 215, and also 225, 228, 230, 231, and 239, are irregular on the surface, from the original flaws of the primary manufacture not having been worked out. Some of the specimens on this Tray exhibit remarkable peculiarities, not noticed in the foregoing; for example, Nos. 218 and 224 are cut off obliquely at the top, where the surface is equally polished with the rest of the implement. Whether this was the original fashion of the celt, or is an evidence of repair, is a question incapable of solution at the present day. No. 220 is also a unique specimen, presenting nearly the same curvature at both extremities. No. 226 has a cutting-edge at both extremities. The remaining celts on this Tray resemble those already described and measured on the foregoing. Nos. 211, 220, 235, and 239, are of siliceous basalt; Nos. 219 and 236 are of the same material, mottled

with spots of reddish felspar. No. 232 is of very fine-grained basalt. Nos. 212, 218, and 223, are of light-coloured, fine-grained, syenitic greenstone. No. 221 is a dark variety of the same. Nos. 213, 214, 224 to 227, 237, and 238, are composed of felspathic trap, mottled with hornblende. Nos. 215, 222, and 234, are of mottled felstone. No. 216 is of greenish-yellow honestone. No. 217 is formed of hornblendic crystalline greenstone. Nos. 228, 230, 231, and 240, are of felstone. No. 229 is of dark shale, the only specimen of it on this Tray. No. 233 is of mottled greenstone porphyry.

No. 212 is from the county of Tyrone. No. 216 was found at Grangemore, near Killucan, county of Meath, on gravel, six feet below the surface of bog. Nos. 222, 224, and 236, came from the county of Derry; and No. 230, from the county of Antrim. Nos. 238, 239, and 240, were—*Presented by Lord Farnham.*

SHELF II., Tray CC, contains thirty-three celts of different patterns, numbered from 241 to 273. The two first rows are small; the last consists of specimens of the long character; each row containing eleven celts. In the first they vary in size, from No. 245, which, like the type of the majority of those on the preceding Tray, is composed of felspathic trap, mottled with hornblende, but of a dark variety, and is $3\frac{1}{4}$ inches long, and $1\frac{3}{4}$ broad,—to No. 241, of shale, which is $4\frac{1}{2}$ inches long, and 2 broad, and has a sharp cutting-edge at both extremities. In this row, most of the specimens are of the flat character, and many have an oblique cutting-edge.

The second row contains eleven celts, averaging a larger size, and in dimensions extending from No. 257, which is $3\frac{1}{4}$ inches long, by $2\frac{1}{2}$ broad, up to No. 253, of shale, which approaches clay-ironstone, and is $4\frac{1}{2}$ inches long, by $1\frac{1}{2}$ in breadth. No. 252 is flat on the under surface, and resembles an ordinary celt split in two. No. 255 is very perfect of its class, and is composed of dolerite, a rock less common in Ireland than basalt, and only occasionally met with in the Collection. No. 256, of basalt, resembles the ovoid celt figured at page 43, Fig. 48. No. 262, of shale, with a drab-coloured surface, resembles the blade of a modern axe.

The last row contains eleven long celts, varying in size, from No. 266, which is $5\frac{1}{2}$ inches long, by $2\frac{1}{2}$ in breadth, up to No. 270, of hornblendic greenstone, $7\frac{1}{2}$ inches long, by $2\frac{1}{2}$ broad; it is slightly curved, and, together with several other specimens on this Tray, is

imperfect on the surface. No. 269, of ironstone shale,—a bad material for making celts, and decomposing in some places,—it is, however, of interest to the antiquary, from exhibiting the remains of the manufacturing process, both in the longitudinal smoothing, and the diagonal rasping or filing. No. 272 is a curved specimen of felstone porphyry, in shape somewhat between Nos. 38 and 48, already figured at pages 41 and 43.

Of the foregoing specimens, not already described, the following lithological specification has been made. Nos. 242 and 258 are of dark shale, approaching Lydian stone. Nos. 243 and 261 are dark shale. No. 244, felspathic trap, mottled with hornblende; of the same stone are Nos. 247 to 252, 257, 259, 266, some of which are of a darker character than others; and No. 251 is a porphyritic variety. Nos. 246 and 254 are of felstone; 260, crystalline greenstone; 262, of shale; 263, of greenstone, coarsely porphyritic; 264 and 265, felstone porphyry; 267, hornblendic greenstone; 268, greenstone; 271, felstone, passing into porphyry; 272, felstone porphyry; and 273, greenstone porphyry, with reddish felspar.

Nos. 242, 243, 247, 248, 250, 253, 255, 257, 258, 260, 261, 269, and 270, were—*Presented by the Shannon Commissioners*; Nos. 244 and 249—*by Lord Farnham*; and No. 256—*by the representatives of Leslie Ogilby, Esq.* No. 251 was procured from the county of Antrim; No. 252, from the county of Armagh; and No. 268, from the county of Derry.

SHELF II., Tray DD, contains twenty-two celts of an inferior description both as to manufacture and material; most of the good and characteristic varieties having been disposed of in the foregoing enumeration. The numbers on this Tray run from 274 to 295; and in size the specimens vary from No. 275, which is only $3\frac{1}{2}$ inches long, by $1\frac{1}{2}$ broad, to No. 295, which is $8\frac{1}{2}$ inches in length and $3\frac{1}{2}$ broad. Many of these celts are imperfect both on the sides and upper ends. Among those formed of shale, No. 290 is a good specimen. No. 291 has a hole partially drilled through its upper end, and apparently by a metal tool. No. 293 is one of the rudest specimens of the long round celt in the Collection; it is $7\frac{1}{2}$ inches in length, but slightly imperfect at top, and $2\frac{1}{4}$ inches in breadth across the middle. Although so rude in the shaft, it has one of the sharpest cutting-edges of any celt in the Collection. No. 294 is an

excellent example of the type of stone which appears to have been carefully sought out for making these articles, viz., felspathic trap, mottled with hornblende (see p. 61); and which, although not very rare, is by no means a common rock. It is called *Petrosilex* by German geologists; usually, felstone or felspathic trap by us.

Nos. 274, 280, 283, 284, and 288, are of siliceous basalt. Nos. 275, 276, 282, 285, 286, 289, and 294, are varieties of felspathic trap. No. 277 is of felstone. Nos. 278, 281, 290, 291, 292, and 295, are varieties of shale. No. 292 shows planes of stratification. No. 279 is gritty slate. No. 287 is hornblendic schist. No. 293 is clay-slate.

Nos. 278, 280, 288, and 289, are from the county of Antrim; No. 277, 279, and 362, from the county of Derry; No. 293 is from the county of Cavan; and No. 295 from the county of Armagh.

SHELF I., Tray **EE**, in the top corner of the third compartment, holds a collection of nineteen peculiarly shaped celts, from No. 296 to 314. No. 296 is a very well-shaped tool, of massive shape, $7\frac{1}{2}$ inches long, by 3 broad, and 2 thick; being more than usually bulky in the middle. It is without a single flaw, and has one of the most perfect sharp tops of any in the Collection, for, in general, such portions are broken off; it also shows the planing on one side, similar to No. 36. This specimen was found $3\frac{1}{2}$ feet under the bed of the river Blackwater, in the barony of Garrycastle, King's County, during the drainage of the Derryholmes district (see Proceedings, vol. v., App., p. 58), and was—*Presented by the Board of Works*. No. 297 is a massive, round-topped celt, $8\frac{1}{2}$ inches long, and $3\frac{1}{2}$ broad, of green grit; its edge has been broken off, as if by hammering. This and the five following were procured from Lough Gur, county of Limerick. No. 298 is $8\frac{1}{4}$ inches long, and $3\frac{1}{8}$ broad, flat, oblique-edged, very sharp, and accurately formed. No. 299, a most perfect specimen, 6 inches long, by $2\frac{3}{8}$ broad, has a semicircular cutting-edge sharp as a modern axe, and a perfect round top, similar to No. 297. No. 300 is a small, chisel-topped celt, $4\frac{1}{2}$ inches long, by $2\frac{3}{8}$ broad. No. 301, a flattish, but perfect celt, is $6\frac{1}{8}$ inches long, by $2\frac{1}{2}$ broad. No. 302 is a remarkable-shaped celt, like No. 24 on Tray **F**, containing the chisels, but is much larger, being oval in figure, and wanting the shoulder to the

edge; it is $5\frac{1}{2}$ inches in length, and $2\frac{5}{8}$ broad at the widest part, which is nearly in the middle. No. 303 is $7\frac{1}{2}$ inches long, and 3 broad, triangular in form, with a bevilled edge, like the tooth-shaped variety, and resembles No. 40, on Tray T, being broadest at the shoulder, where the edge and sides meet. It was found, with the four following specimens, in the bed of the river Corrib, in excavating the ancient ford at Menlo, near Galway. No. 304 is a rude, natural piece of shale, sharpened and rounded at the edge and the top, $6\frac{1}{2}$ inches long, by $2\frac{3}{4}$ broad. Nos. 305, 306, and 307, are of the same character and material, showing on their surfaces the natural cleavage, but shaped by art on the cutting-edge. These five celts were—*Presented by W. T. Mulvany, Esq.*, in 1852, on the part of the *Board of Works* (see *Proceedings*, vol. v., App., p. 59). They resemble the common kind found in the Shannon. No. 308 is $6\frac{1}{2}$ inches long, by $2\frac{1}{2}$ broad; it is imperfect at top, but has one of the most beautifully-shaped sharp cutting ends of any in the Collection; it is composed of felstone porphyry. The six remaining celts, at the end of this Tray, are of a small character, and inferior make and shape.

No. 296 is composed of greenish-gray translucent felstone; No. 297 is of green grit, weathering white; No. 298, of red felspathic slate; Nos. 299 and 308, of greenstone and felstone porphyries; Nos. 300 and 301, of felstone; Nos. 302, 303, 314, 320, 321, and 324, are of either fine-grained crystalline or hornblendic greenstones, or of greenstone schists; Nos. 304 to 307, and 315 to 318, are of dark shale; Nos. 309, 310, and 313, are of felspathic trap, mottled with hornblende; Nos. 311 and 312, of siliceous basalt; No. 319, of coarse micaceous hornblende slate; No. 322, of coarse gritty slate; and No. 323, of coarse micaceous clay-slate.

Nos. 308, 309, and 310 were found at Loughan Island, on the river Bann, county of Derry, and were, with No. 314, from Portna—*Presented by the Board of Works*.

SHELF III., Tray FF, contains ten celts of the largest description, and, with one exception, all of the broad, flat character, numbered from 315 to 324. No. 315 is a very thin, flat shale celt from the Shannon find, showing the natural surface on the sides, and marked by red lichen on the edges; but an examination of the cutting-edge where it turns into the shaft shows that the rubbing down of

this surface occurred after the staining had taken place, subsequent, however, to the chipping process which gave it shape, as if it had been lost, and had lain in the water until the red lichen formed upon it, and was then recovered and re-sharpened. It is $7\frac{1}{4}$ inches long by $3\frac{5}{8}$ broad, and $\frac{5}{8}$ ths of an inch thick. Nos. 316 and 317 are of the same character, the latter having, however, a better cutting-edge. No. 318, from Oughterard, county of Galway, is a large, flat, elliptical celt, above 10 inches in length, and $2\frac{5}{8}$ broad in the middle, and sharpened at both extremities. Passed through a wooden handle, it would make a formidable battle-axe. No. 319, of coarse micaceous hornblende slate, a rude, rough celt, much acted on by air or water. No. 320, from the county of Armagh, is a very remarkable celt of the long flat character, $13\frac{3}{4}$ inches long, $4\frac{1}{2}$ broad, and $1\frac{1}{4}$ thick. No. 321 is of the long rude type, with a sharp edge and round-pointed top; it is $7\frac{1}{4}$ inches long by $2\frac{1}{4}$ broad. No. 322, a rude celt, $7\frac{3}{4}$ inches long by $3\frac{1}{4}$ broad. No. 323, the largest celt in the Collection, figured on p. 43; is $21\frac{3}{4}$ inches long, $3\frac{3}{4}$ broad, and 1 thick. No. 324, a rude celt of schist, but polished at the cutting-edge, is $9\frac{5}{8}$ inches long by $3\frac{3}{8}$ broad. It and Nos. 316 and 317 were found in the Shannon.

Nos. 315 to 318 are of dark shale, the latter having lines of stratification visible; No. 320 is of greenstone; No. 321, of hornblendic greenstone; No. 322, of coarse, gritty slate; No. 323, of coarse, micaceous, clay slate; and No. 324, of hornblendic greenstone schist.

In the Cross-CASE between the first and second Compartments will be found, with a few exceptions, the remainder of the celts; nearly all of which were found in the bed of the Shannon, and were presented by the Commissioners for Improving the Navigation of that river. Trays **GG** and **HH** are occupied with celts from the great Shannon find, and present examples of the two materials found in that locality,—the former affording samples of the shale, and the latter of the trap-rocks and felstones. In shape, the specimens on these two Trays differ materially—those of shale being all flat, but almost invariably perfect at the cutting-edge, while those of the harder rocks on Tray **HH** are mostly of the long and round character, and have been much injured. Nos. 325, 326, 327, and 328, are dark shale; Nos. 329 to 335 are dark shale, approaching Lydian

stone; Nos. 329 to 353 are all dark shale with planes of stratification, except No. 344, which is calcareous shale.

SHELF I., Tray **GG**, contains twenty-nine celts, numbered from 325 to 353. In size they vary from No. 343, which is $7\frac{1}{2}$ inches in length, by 3 in diameter, to No. 337, which is $4\frac{1}{2}$ inches long, by $1\frac{1}{2}$ in breadth. Except in a few instances, the precise localities from whence these were obtained have not been ascertained; however, Nos. 332 and 344 are stated to have been found in the bed of the ford at Keelogue, but they do not present anything remarkable.

SHELF I., Tray **HH**, contains thirty-seven celts, numbered from 354 to 390. Those on the top row, twelve in number, are generally short and broad, and vary in size from No. 360, which is $3\frac{3}{8}$ inches long, to No. 365, which is $4\frac{1}{2}$ inches in length. Those of the second row are mostly of the smaller varieties, varying from No. 366, which is 3 inches long, to No. 377, which is $4\frac{1}{2}$. In the bottom row the specimens are generally of the long thin variety, and vary in size from No. 378, which is 7 inches long, to No. 385, which is $4\frac{1}{2}$. No. 378 is marked with red paint, which it appears to have been used to stir. No. 379 and 380 are slightly curved, and much water-worn; the latter, as well as No. 382, is stained with a deep red colour by the lichen already alluded to. No. 381, felspathic slate streaked with hornblende, bears the marks of the secondary, or rubbing process, similar to No. 13. No. 383 is the most perfect specimen of the lot, although composed of yellow sandstone; it is $5\frac{3}{8}$ inches long, and $2\frac{1}{8}$ broad, where the cutting-edge joins the body. No. 354 is hornblendic greenstone; Nos. 355 and 387 are siliceous slate; Nos. 356 and 378 are gritty slate; Nos. 357 and 358, shale; No. 359, pale green felstone; Nos. 360 to 364, and 371 to 376, are felspathic trap, mottled with hornblende, Nos. 361 and 364 being dark varieties, and No. 362 a light variety. Nos. 365 and 384 are dark shale; Nos. 366, 368, and 379, are dark shale, approaching Lydian stone; No. 367, fine-grained greenstone; Nos. 369, syenitic greenstone; No. 377, porphyritic greenstone; No. 380, crystalline greenstone; No. 381, porphyry; Nos. 382 and 390, clay-slate; No. 383, yellow sandstone; No. 385, fine siliceous slate; No. 386, mottled felstone porphyry; No. 388, felstone schist; and No. 389, dolerite. This concludes the classified celts attached to Trays. Of the remaining, amounting to one hundred and twenty-

one, 87 were found in the Shannon excavations, making the entire amount of chisels and celts discovered in that locality one hundred and fifty-seven, have been placed on the second and third shelves in the cross-case, between the first and second Compartments; they are nearly all of shale, of the flat character, and of medium size. Several are marked with the red lichen, already alluded to, which proves that these specimens were not imbedded in mud or gravel, but had, at least, one side exposed to the action of running water.

The FIRST CROSS-CASE, SHELVES II. and III., contains ninety celts, eighty-one of which (numbered from 391 to 471) were found in the Shannon, and which, together with six others in the Railcase, were—*Presented by the Shannon Commissioners.*

Of the other nine celts on the third Shelf, numbered from 472 to 480,—No. 473 is a small specimen, $3\frac{1}{2}$ inches long, formed out of a shale nodule, and found 15 feet under bog in the townland of Lisachrin, parish of Desertoghill, and county of Derry. No. 474, of dark shale, and 475, of felstone slate, mottled with hornblende, were procured from the parish of Rasharkin, county of Antrim, a locality that has afforded many other specimens of stone implements, as already stated. No. 476 is a chisel-shaped instrument, formed out of a piece of clay-slate, very rude and unfinished in the body, but most accurately shaped, polished, and sharpened to a semicircular cutting-edge. This evidently was a tool in which the edge alone was serviceable: had it answered the purpose of a weapon-axe, more time and labour would, in all probability, have been expended upon its external figure.

RAIL-CASES A and B.—The remaining thirty celts will be found in the end of Rail-case A, and the commencement of Rail-case B, and are numbered from 481 to 511. From Nos. 481, 482, and 483, have been drawn the illustrations, Figs. 37, 42, and 51, at pp. 41 and 44.

No. 484, measuring $3\frac{1}{2}$ inches long, by $1\frac{1}{2}$ broad, is a small, decorated, chisel-shaped celt, of shale, resembling, in most respects, the foregoing number. It has four small perforations, not thorough, but surrounded by engraved circles. This came to hand after the decorated celt, Fig. 51, p. 44, was described. No. 485, of siliceous slate, $3\frac{1}{2}$ inches long, by $1\frac{1}{2}$ broad, is perforated at the smaller extremity, somewhat chisel-shaped, and flat on the side-edges. No. 486 is

2 $\frac{1}{2}$ inches long, by 1 $\frac{1}{8}$ broad, of pale hornblendic schist; it was found two feet under the surface, in gravel, over moory, alluvial soil, in the townland of Gardenfield, parish of Tuam, and county of Galway, during the drainage of that district in 1851, and was—*Presented by the Board of Works*. No. 487, already described at p. 45, and covered with marks like Ogham characters, is 7 $\frac{7}{8}$ inches long, by 3 broad, and was procured from M. J. Anketell, Esq., of the county of Monaghan. No. 488, of shale, 6 $\frac{1}{8}$ inches long, by 2 broad, is a thin, narrow celt, in shape like No. 481. No. 489, of pale green felstone, is 5 inches long, by 1 $\frac{7}{8}$ broad. No. 490 is flat on one side, but on the other ovoid, not unlike Fig. 47, p. 43; its dimensions are 3 $\frac{7}{8}$ inches long, by 2 $\frac{1}{4}$ broad, and it is composed of a remarkably light clay-slate, of the rotten-stone type, similar to No. 461 of the Shannon celts; it was procured from the county of Down. The three next specimens resemble in shape the muscle shell. No. 491, composed of felspathic trap, mottled with hornblende, is 5 $\frac{1}{8}$ inches long, by 2 broad. No. 492, of shale, 3 $\frac{1}{4}$ inches long, by 1 $\frac{1}{4}$ broad, is similar in shape to the foregoing; its broad end being rubbed into a celt-shaped cutter, and on the other retaining the natural spike. No. 493 is another muscle-shell-shaped celt, of gray sandstone, 3 $\frac{3}{4}$ inches long, by 1 $\frac{1}{4}$ broad. The four following numbers, from 494 to 497, are long, chisel-shaped instruments, with celt edges. The first is round-handled, 3 $\frac{1}{8}$ inches in length, by 1 $\frac{1}{8}$ broad; it is composed of gritty slate, and was found in the drainage works of Pettylough, on the Farnham estate, county of Cavan. No. 495, a long, round-bodied chisel-celt, of fine-grained, compact grit, is 4 $\frac{3}{4}$ inches long, by 1 $\frac{1}{8}$ broad. No. 496, a long, narrow, chisel-shaped tool, of gray felstone, 3 $\frac{7}{8}$ inches long, by 1 $\frac{1}{4}$ broad; procured from the parish of Tamlaght O'Crilly, county of Derry. No. 497, a dark variety of felstone, mottled with hornblende, is 3 $\frac{7}{8}$ inches long, by 1 $\frac{1}{8}$ broad. No. 498, of same material as the last, but of a light variety, is the lower portion of a very beautiful shaped celt, found in Portna Shoal; it was—*Presented by the Board of Works*. No. 499 is small and chisel-shaped, of gritty shale, 3 $\frac{3}{8}$ inches long, by 1 $\frac{3}{8}$ broad. Nos. 500 and 501 are of felstone, mottled with hornblende; the former is 3 inches long, by 1 $\frac{3}{8}$ broad; the latter 3 inches in length, by 1 $\frac{1}{2}$ broad. No. 502, of dark dolerite, with spangles of mica, is 3 $\frac{1}{4}$ inches long, by 1 $\frac{1}{2}$ broad.

No. 503, of hornblende slate: a small celt, from the county of Down, much weathered, but perfect in outline; its length is $3\frac{1}{2}$ inches, by $1\frac{1}{2}$ broad. No. 504, a hand chisel, of pale slate, $2\frac{3}{4}$ inches long, by 2 broad, is remarkable for being found in an urn near the ruins of Trummery church, county of Antrim. No. 505, of shale, $3\frac{1}{8}$ inches long, by $2\frac{1}{8}$ broad, was—*Presented by Captain Walsh*. Nos. 506 and 507 are of felstone, mottled with hornblende; the former is a well-polished, medium-sized celt, $4\frac{5}{8}$ inches long, by $2\frac{3}{8}$ broad, remarkable for the extreme sharpness and perfection of its edge, which presents a wavy line rarely seen in celts, but which may be observed in Nos. 482 and 498 in this compartment; the cutting-edge is prolonged on one side, and not on the other; it was found in the excavations above the new bridge at Killeshandra, county of Cavan. No. 507, similar in shape to No. 481, is $5\frac{1}{4}$ inches long, by 2 broad; it was found in Drumrane reach, in the bed of the old river near Ballinamore, county of Leitrim. No. 508, of hornblendic syenite; round-handled, and very perfect, is $5\frac{1}{8}$ inches long, by 2 broad, and $1\frac{1}{2}$ thick; it was found near Killeshandra during the drainage operations there, and was, with the two previous specimens—*Presented by the Board of Works*. No. 509, of coarse, decomposing greenstone, and 510, of basalt, are bulky celts, resembling punches, with which they might not improperly be classed. No. 511 is a dark shale celt, $6\frac{1}{8}$ inches long, and 3 broad; it was found in gravel, $4\frac{1}{2}$ feet beneath the surface of the river Suir, above Knocknageera Bridge, barony of Eliogarty, and county of Tipperary, and was—*Presented by the Board of Works*. No. 512, the last in the Collection, of shale, $3\frac{1}{4}$ inches long, was found near Rathbarn, county of Sligo.

Nos. 485, 488, 491, 492, 495, and 497 were—*Presented by the Shannon Commissioners*; and Nos. 494 and 502—*by Lord Farnham*.

The total number of stone celts in the Academy's Collection at present amounts to five hundred and twelve.

Upon the composition and lithological characters of these stone celts, Professor Haughton, having carefully examined every specimen in the Collection, has furnished much valuable information, of a kind which has not heretofore been associated with antiquarian researches. Upon reviewing this grand col-

lection of celts, we cannot but be impressed with the fact already alluded to, that all the good specimens, evidently designed for special purposes, and given certain definite shapes, were formed out of rocks characterized by the possession of all the requisite qualities for such articles; while the rude, ill-formed, and apparently inexpensive implements of this class were made of shale, slate, schist, grit, or any other stone which offered within the reach of those who required them.

Of the better qualities of rock suited for celt-making,—the type of the felspathic extreme of the series of trap rocks is the pure felstone, or petrosilex, alluded to at page 65, of a pale bluish or grayish green, except where the surface has been acted upon, and the average composition of which is 25 parts quartz and 75 felspar. Its physical characters are absence of toughness, and the existence of a splintery conchoidal fracture almost as sharp as that of flint. It was this which caused it to be preferred for the manufacture of all sharp cutting celts. This rock is closely allied to obsidian and some varieties of trachyte, and exists at Bellrock, Ballymurtagh, county of Wicklow; Carrickburn, county of Wexford; Knockmahon, county of Waterford; and Benaunmore, Killarney, county of Kerry.*

At the hornblendic extreme of the trap rocks we find the basalt, of which also celts were made; tough and heavy, the siliceous varieties having a splintery fracture, but never affording so cutting an edge as the former. It is composed of augite, zeolites, and magnetic iron, and is confined to Antrim alone.

* In Rail-case B has been placed, for the sake of comparison, a celt found in the cutting of a railway between Kingstown and Spanishtown, in the island of Jamaica, and—*Presented by G. M. Miller, Esq., C. E.* It is $8\frac{1}{2}$ inches long, and $4\frac{1}{2}$ broad at the widest portion, pointed at one end, and very sharp at the round cutting-edge. It is shaped like a muscle shell, is highly polished, and does not possess a single flaw; it may be taken as one of the most beautiful specimens of a celt, and one of the most perfect samples of the material most precious in the formation of such instruments, being a greenish felstone.

Intermediate in character between these two rocks, we find all the varieties of felstone, slate, and porphyry streaked with hornblende, from which the great majority of the foregoing implements have been made.

There can be little doubt that these rocks were specially sought after for the manufacture of the required implements; it is also apparent that the knowledge of these stones and the formation of these tools and weapons was a special art, and that there was a trade in them from one part of the country to another.

In the absence of direct proof, the inquirer must form his own opinion respecting the precise use of the typical Stone Celt,—as to whether it was a tool or a weapon, or served the office of both. Whether the celt was the *Lia miledh*, or warrior's stone alluded to at p. 17, is also a question worthy of investigation. The following most interesting references to documentary evidence, bearing upon this question, have been communicated by Mr. Curry:—

In the ancient Irish tract descriptive of the career of Congal Claringnech, prince of Ulster, preserved in the Library of the Academy, we read that Fergus “put his hand into the hollow of his shield, and took out of it a *Leacán laechmhileadh* [the semi-flat stone of a soldier-champion], and threw a manly cast, and struck the hag [a druidess] on the front of her head, which it passed through, and carried out its own size of the brains at her poll.”

In the Book of Ballymote it is said that Eochaidh, son of Enna Ceinnselach, threw a cast of a *Liagh churadh* (a champion's flat stone), which he held in his girdle, which struck Laidcainn, the poet, in the forehead, where it remained, and he was killed by it.

In the record of the battle of the Ford of Comar, near Fore, in the county of Westmeath, and which is supposed to have occurred in the century before the Christian era,—it is said that “there came not a man of Lohar's people without a broad, green spear, nor without a dazzling shield, nor without a *Liagh-lamha-*

laich [a champion's hand-stone], stowed away in the hollow cavity of his shield And Lohar carried his stone like each of his men; and seeing the monarch, his father, standing in the ford with Ceat, son of Magach, at one side, and Connall Cearnach at the other, to guard him, he grasped his battle-stone quickly and dexterously, and threw it with all his strength, and with unerring aim, at the king, his father; and the massive stone passed with a swift rotatory motion towards the king; and despite the efforts of his two brave guardians, it struck him on the breast, and laid him prostrate in the ford. The king, however, recovered from the shock, arose, and, placing his foot upon the formidable stone, pressed it into the earth, where it remains to this day, with a third part of it over ground, and the print of the king's foot visible on it."

The account of the battle fought near Limerick by Callachan Cashel against the Danes, about A. D. 920, and preserved in the Book of Lismore, describing the warfare of the period states, that "their youths and their champions, and their proud, haughty veterans, came to the front of the battle to cast their stones, and their small arrows, and their smooth spears on all sides." So that even so late as the tenth century stones were used in battle in Ireland.

From these it is manifest that the stone used was sharp at one end, and unconnected with a handle, or it could not (making every allowance for the mode of expression of the period) have passed through and through the head. It appears to have been a naked celt thrown with the hand.

SLING-STONES.—At page 17 we gave a description of the flint sling-stone, and this seems the proper place to describe similar implements of stone. In Rail-case B will be found a number of flat, oval stones, of small size, numbered from 1 to 9, and which apparently belong to this species of weapon. No. 1, here figured one-third the natural size, is formed out of a piece of hard gritty sandstone, of a reddish colour, and is $3\frac{1}{16}$ inches in the long, and $2\frac{1}{2}$ in the short diameter, and is $1\frac{1}{2}$ thick. It is geometrically perfect in all its proportions,

and exhibits great skill and labour in its formation. Whether used as a finger-stone, or projected with a sling, a more perfect missile of its kind could not possibly have been formed ; and it is only to be equalled by the flint weapon of the same



Fig. 55. No. 1.



Fig. 56. No. 3.



Fig. 57. No. 5.

variety already figured at page 18, and to be found on Tray E, No. 490. That such stones, as well as the sharp, polished celt, were risked in the cast, is true ; but their value as destructive engines can only be measured by the importance attached to the death of a celebrated leader or champion at the time they were in use ; and the perfection which was, in all probability, attained in early times in projecting such implements as celts, finger-stones, or sling-stones, may be estimated by the precision with which stones were flung at faction-fights in modern times. No. 2 is a perfect specimen of the foregoing, but somewhat flatter and longer, and not so very regular in its proportions ; the edge is also rather sharper ; it is made of limestone pebble, and is $3\frac{1}{4}$ inches long, by $2\frac{1}{2}$ broad, and $1\frac{1}{4}$ thick. In the centre of each flat surface may be observed a slight indentation, such as might be effected by rubbing with a metal tool. This curious mark is generally cut into the stone from about a line, or the eighth of an inch, obliquely to the perpendicular line of the implement, and has been observed on many similarly formed, and also on shuttle-shaped stones in this country and in Northern Europe. Models of some of these will be found in the Scandinavian collection. While the foregoing were evidently formed with the greatest care, and according to some definite rule, and for a precise object, natural stones, approaching them in shape,

appear to have been employed for like purposes, of which we possess some examples in this Collection. Nos. 3 and 4, the former represented one-third the natural size by Fig. 56, are natural quartz rock pebbles, flat, and nearly circular, with round edges, apparently water-worn, and resembling, as far as possible in a state of nature, artificially formed sling-stones, and appear to have been used for a like purpose; they both bear the indented line on each side. This mark is sometimes polished like the rest of the surface, but more frequently bears the mark of a tool, as if worked in by sharpening the point of a knife or dagger, for which use they may have been occasionally employed. They were, in all probability, carried in either the satchel, the girdle, or the hollow of the shield. If taken in the hand, a more perfect finger-stone cannot well be imagined. No. 3, which is $2\frac{5}{8}$ inches in the largest diameter, was—*Presented by Lord Farnham*. No. 5, Fig. 57, formed out of quartz rock, was either another variety of sling-stone, or is in the formative process towards No. 1, from which it differs in having a more pointed extremity, and flat side-edges. It is $2\frac{7}{8}$ inches long, $2\frac{1}{8}$ broad, and $1\frac{1}{4}$ thick in the middle, from which it inclines on all sides to the flat side-edge, which is $\frac{7}{8}$ ths of an inch in breadth in the middle, and about $\frac{1}{2}$ an inch at each extremity. This, with Nos. 1 and 2 (being the three altogether artificially formed stones of this class in the Collection) were found during the Shannon excavations, but the precise localities, or the peculiar circumstances under which they were discovered, have not been recorded. They were—*Presented by the Shannon Commissioners*.

No. 6 is a sling-stone of quartz rock, similar to No. 1. It is nearly $3\frac{5}{8}$ inches long, is $2\frac{3}{4}$ broad, and $1\frac{1}{2}$ in thickness. This remarkable specimen, which is the longest of the variety, and was found in the Dunshaughlin Crannoge,* is a natural flattened oval stone, which has been rubbed or ground on the edge so as to take off any irregularity which may have presented on

* For the description of a Crannoge, or stockaded island, see Section III., Wooden Materials.

the natural surface; it also shows the commencement of the oblique indentation on the sides as if a metal tool had been sharpened upon it. No. 7 is an oblong or kidney-shaped natural stone, 5 inches in length, and rounded at the extremities; the side indentation is not artificial: it also was procured from Dunshaughlin. No. 8 is like the foregoing, of quartz rock, but is a smaller specimen, being only $3\frac{1}{4}$ inches in length. No. 9, an oval, naturally-formed stone, of gray grit, $3\frac{1}{8}$ inches long, 3 broad, and $1\frac{1}{4}$ thick, smooth on the surface, but has been artificially rubbed all round the edge; in fact, the process of forming it into a perfect sling-stone had been just commenced.

In the ancient metrical story of the *Tain-bo-Cuailgne*, or great cattle raid of Louth, several descriptions are given of the dress and arms of the early Irish soldiery, extracts from which have been kindly furnished by D. H. Kelly, Esq.* Thus, in Cuchullin's conflict with Leathan, the champion made a sign to his slingers to remain under cover of the Bards, and to sling round stones over their heads at Meabh, Queen of Connaught. Again, in his combat with Cuir Mac Dalot—the warrior, “on his antagonist fixing firm his eyes, flung his eight balls high up into the air; and whilst on them his attention was fixed, slung one so dextrously that it struck Mac Dalot's shield, and right through it reached his face. And so great was the force of the ball by Cuchullin flung, that through his head it passed, driving his brains out at the hind part of his fractured skull.” And in the description of his chariot and armour, after enumerating his swords, spears, arrows, and shields, &c., it says, he bore “in his hands his slaughter-dealing sling.”

This concludes the weapons and weapon-tools of stone; and, according to our classification, the tools proper follow next in succession.

* The Rev. Dr. Graves has recently placed at our service a valuable translation of this MS., made by Mr. Curry.

SPECIES II.—TOOLS.

HAMMERS.—Next to the stone-hatchet or celt, used as a tool or weapon, and either held directly in the hand, or fitted into a wooden handle, we may take up the stone hammer, into which the handle was inserted. This necessitated the formation of an aperture, which was a decided advance in art; yet the typical form of the celt was retained in the earliest of these tools. The hole was probably produced by rotatory friction, as in rubbing or drilling with another hard, round stone, and the use of sand and water. Yet, as the stone hammer descended to much more modern times than weapons of the same material, metal may have been employed in making the aperture. Indeed, in some of the most perfect specimens in the Collection, a careful examination of the edge, and also the inner surface of the hole, leaves no doubt that the piece was cut out with a metal drill (see in particular Nos. 7, 9, 10, 12, and 21, on Trays **II** and **KK**). Where metal was used, the sides of the apertures are cylindrical, and in some cases the circular lines left by the tool may be seen, as in No. 7; where, on the contrary, a stone was used, the edge of the aperture is deeply splayed on each side, and the septum broken through, as shown in several of the hammers on Tray **II**, especially No. 5. From an examination of the specimens it would appear, that in the earliest and rudest, the site determined upon for the hole was first chipped, or punched into a hollow, or indentation, and then the rotatory or grinding action of a hard, round, stone chisel, or punch,—such, perhaps, as some of those on Tray **M**,—was employed. By the same process the opposite side of the hammer was worked upon until the apertures met in the centre. The commencement of this process may be seen in the ovoid-shaped stones on Tray **NN**, where we find a series of objects illustrating the process of the formation of the aperture (see p. 94).

The stone hammers in the Collection may be divided into five varieties. First, the celt-shaped, of which the accompanying illustrations are good examples; the large, rude specimen, Fig. 58, one-fifth the natural size, is said to have been recently in use before it came into the possession of the Academy; and is provided with a modern wooden handle. It is composed of coarse hornblendic greenstone, is $10\frac{3}{4}$ inches in length, rounded at one extremity, and pointed at the other. Such an implement would be very effective in driving stakes, propelling wedges, chipping and shaping stones, or hammering punches, chisels, or cutters, in mining operations, or in slaughtering cattle. In this, and all the other varieties of celt-shaped hammers, the aperture is placed behind the centre. In the small specimen, No. 5, Fig. 59, we find the type preserved, although it is

somewhat pointed at the end, behind the handle; it is $4\frac{3}{4}$ inches long, and shows, in a remarkable

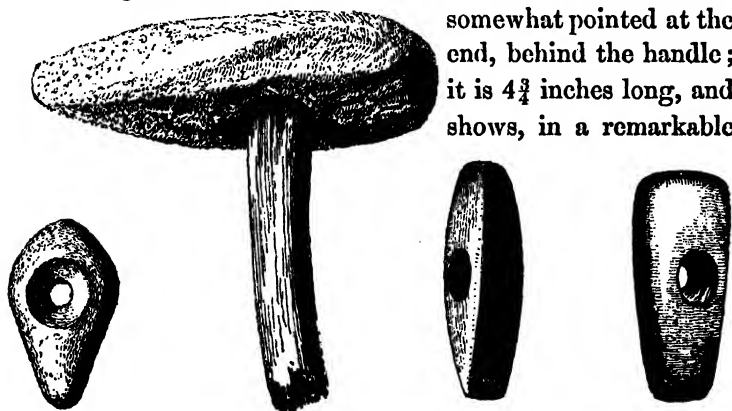


Fig. 59. No. 5.

Fig. 58. No. 1.

Fig. 60. No. 15.

Fig. 61. No. 7.

manner, the deep splay for the hole. Of the same description is No. 4, also on Tray **II**.

The second variety, Fig. 60, is narrower than the former, and resembles the modern stonemason's hammer, of which Nos. 14, 15, 16, and 17, on Tray **KK**, are good examples. In these, the particulars of which are given in the description of that Tray, the aperture is in the centre, or very nearly

so. Fig. 61, No. 7, of flint, shows the track of the metal tool upon its aperture. It is, like all the others, except No. 9, one-fifth the natural size.

The third variety, Fig. 62, is egg-shaped, three specimens of which, Nos. 8, 9, and 10, are shown on Tray **KK**, and of which the accompanying illustration, drawn one-



Fig. 62. No. 9.

fourth the actual size, affords a good example. The aperture is small and cylindrical. It is of greenish micaceous sandstone. The fourth variety is the mallet, or maul, Fig. 63, of which we find two fine specimens, composed of



Fig. 63. No. 12.

gneiss, highly polished, with small, accurately cut apertures, and having rounded faces at each end. Such implements were, in all probability, used in metal-working, especially in the manufacture of gold and silver. They are oval in section, as shown in the cut.

The fifth variety is characterized by its broad hatchet-edge, indented at top and bottom, and massive extremity behind



Fig. 64. No. 19.



Fig. 65. No. 18.

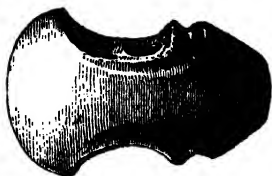


Fig. 66. No. 21.

the handle, like a modern pole-axe. These three illustrations are all of the same variety, although presenting great diversity in size.

Fig. 64 is of red sandstone, and only $5\frac{1}{4}$ inches long; while Fig. 65, which is of serpentine, and may be styled a massive sledge-hatchet, is $8\frac{1}{4}$ inches long, and $4\frac{1}{2}$ wide, the aperture being $1\frac{1}{2}$ in diameter; it weighs 6 lbs. 6 oz. The third specimen of this variety,

Fig. 66, is, with its fellow, No. 20, one of the most beautiful specimens, both in design and execution, of the stone battle-axe which has been found in the British Isles. It is composed of fine-grained hornblendic syenite, and is highly polished all over, including even the sides of the aperture. It is $5\frac{3}{4}$ inches in length, and $3\frac{1}{2}$ broad at the widest portion. The edge is as sharp as that of most celts, while the hammer end is smoothed and polished; thus it might have been used as a maul in the workshop of the goldbeater; or as a war-mace, or battle-axe, have been wielded by the hand of the chieftain.

Stone hammers, and not unfrequently stone anvils, have been employed by country smiths and tinkers in some of the remote country districts until a comparatively recent period. The Irish name for a hammer is *ord*, a sledge,—a generic term; hence *lamh-ord*, the hand-sledge; *cas-ord*, the short, winding hammer; and *maeolin*, the little bald, or clawless hammer, &c.

COMPARTMENT III.—SHELF III., Tray II., contains seven hammers of the flat celt shape, and having the aperture for the handle behind the centre. No. 1, Fig. 58, on p. 79, is one of the largest size, measuring $10\frac{3}{4}$ inches in length, $5\frac{1}{4}$ in breadth, and $2\frac{3}{4}$ thick; it is round at one end, and somewhat pointed at the other, and is composed of coarse hornblendic greenstone. No. 2 is of the same character, but much broader at the point, is 10 inches long, $5\frac{1}{2}$ broad, and $2\frac{3}{4}$ thick: the hole is placed behind the centre, and in both it and No. 1, the top, or upper surface, is more convex than the bottom. No. 3, a portion of a large hammer, of dolerite, 5 inches long, $4\frac{1}{2}$ broad, and $3\frac{1}{2}$ thick, is more pointed at the end than either of the foregoing, but has the hole for the handle apparently more in the centre. The fracture through the middle of the fragment enables us to see that the hole was made from both sides, meeting in the centre. It was found at Brown's Bay, Island Magee, county of Antrim, in 1846, and was—*Presented by J. Huband Smith, Esq.* No. 4 is the largest specimen in the collection, being nearly 12 inches in length, by $5\frac{3}{4}$ broad at the widest portion, and $2\frac{1}{2}$ thick. It is also of the celt shape, but slightly indented, so as to pre-

sent curves in the outline between the handle-hole and the point, which latter is $7\frac{3}{4}$ inches from the centre of the hole; both ends are round; the upper surface, presented by its present position, is convex. This specimen, together with Nos. 2 and 5, are formed of white coal sandstone. No. 5 is a miniature example of the former, but the outlines are much more elegant; it is $4\frac{3}{4}$ inches long, $2\frac{7}{8}$ broad, and $1\frac{1}{8}$ thick. The hole is behind the centre, but the anterior portion is comparatively more prolonged than that of the preceding. The aperture is remarkable, showing the process of cutting out the piece, the splay being so great that it is $1\frac{3}{4}$ inches wide at the surface, while it is but $\frac{2}{8}$ ths of an inch in the clear of the bore. Nos. 6 and 7 have the handle-hole nearer the centre than any of the foregoing. No. 6 is of close-grained grit, $4\frac{7}{8}$ inches long, by $2\frac{1}{2}$ broad, and $2\frac{7}{8}$ thick; it is slightly imperfect. No. 7, represented by Fig. 61, on page 79, is of a somewhat different shape from any of the former; it is $5\frac{3}{4}$ inches long, $2\frac{3}{4}$ wide, and $1\frac{5}{8}$ thick, presenting nearly a flat face at each end. It is of smoothly polished flint. From the circular cutting within the aperture, one is led to the belief that it was formed with a metal drill, and not made with another stone.

SHELF III., *Tray KK*, contains fourteen hammers and hammer-shaped axes, from Nos. 8 to 21. Nos. 8, 9, and 10, are oval-shaped hammers, similar in form to those egg-shaped stones, with indentations in the sides, which may be seen at the top of *Tray NN*. No. 8 is $4\frac{1}{2}$ inches long, by $2\frac{3}{8}$ broad, and $1\frac{1}{8}$ thick. The ends are rounded; it is slightly flattened in the middle; the aperture is in the centre, and is less bevelled than in the specimens on the foregoing *Tray*. It, together with Nos. 15, 16, and 17, upon this *Tray*, were found in the excavations at Portna Shoal, river Bann, and were—*Presented by the Board of Works*. (See also page 10.) No. 9 is egg-shaped, $4\frac{3}{8}$ inches long, $2\frac{5}{8}$ broad, and $2\frac{3}{8}$ thick, rounded at the extremities, and remarkable for being an example of a hammer in which the bore of the aperture presents parallel sides, it having been apparently drilled out by some metal tool. This and No. 8 are of greenish micaceous sandstone, smoothed, but not polished. It was procured from the bed of the Shannon, about 50 yards above the bridge of Athlone, and was—*Presented by the Shannon Commissioners*. No. 10, Fig. 62, composed of crystalline

syenite, pitted on the surface, is of the same pattern, but broader; it is $4\frac{1}{2}$ inches in length, 3 broad, and $2\frac{3}{8}$ thick. An examination of the aperture, the sides of which are nearly parallel, will show the central ridge, where the septum between the borings was broken through.

Nos. 11 and 12 are mauls or circular mallets, of gneiss, smoothed all over with great care. In both the aperture is comparatively small for the size of the tool, and is cut out with great precision, the sides being parallel and the surface perfectly smooth; so far as we are now capable of forming an opinion, nothing but a metal drill could have taken out the circular piece which originally filled this aperture. These mauls are slightly larger at one extremity than the other. No. 11 is $3\frac{1}{2}$ inches long and $2\frac{1}{4}$ broad. No. 12, Fig. 63, on page 80, is $3\frac{1}{2}$ long, and $2\frac{3}{8}$ broad: it shows the ridge where the boring from either side met. It was—*Presented by Lord Farnham.*

No. 13 is a small tool, like a stone-breaker's hammer, only $3\frac{1}{2}$ inches long, and composed of gneiss. It was found at Higginsbrook, near Trim, and was—*Presented by F. Higgins, Esq.*

Nos. 14, 15, 16, and 17, resemble modern stone-masons' dressing hammers; have large oval apertures nearly central, and sharp pick or wedge-shaped points, which taper to both extremities, one of which has a round striking-face, and the other a wedge or hatchet edge.

No. 14 is $6\frac{1}{2}$ inches long, and differs from the others of its class in having a hatchet-edge $2\frac{3}{8}$ inches in length, while the rounded extremity at the other end is but $1\frac{1}{4}$ inches broad. The hole is very large for the size of the hammer, being $1\frac{1}{4}$ inches in diameter, and slightly bevilled; owing to the thinness of its sides, it has been fractured at this point; it is of gray sandstone, weathering brown.

No. 15, of fine hornblendic greenstone, represented as Fig. 60, at p. 79, is the most perfect specimen of its kind, and resembles the modern stone-mason's iron hammer. It is 6 inches long; $2\frac{1}{2}$ inches wide at the broadest portion, and $1\frac{1}{2}$ thick. The hole, which is nearly in the centre of the tool, is oval, being $1\frac{1}{4}$ inches in length, and 1 inch in the transverse diameter; it is slightly dished or hollowed. The cutting-edge is hatchet-shaped, and nearly square; the

hammer-end slightly rounded. No. 16 is of coarse gray sandstone, $4\frac{1}{2}$ inches long, and much acted on by the atmosphere; it differs from the former in the broadest portion being behind the centre, where it is $1\frac{3}{4}$ inches broad; the hole is more oval than even the former, being $\frac{1}{3}$ ths by $\frac{2}{3}$ ths of an inch in diameter. No. 17—This very perfect specimen, composed of fine-grained white sandstone, presents nearly the same form on either side of the aperture, which is very large, and has slightly sloping sides. It measures $4\frac{3}{8}$ inches long, by $1\frac{1}{2}$ in breadth, is round at one end, and hatchet-shaped at the other; the hole is 1 inch in diameter.

No. 18, a large sledge-axe, of serpentine, such as that found in Connemara, measuring $8\frac{1}{4}$ inches long, $4\frac{1}{3}$ broad at the cutting-edge, and also at the back, is indented to the width of $2\frac{5}{8}$ inches in the centre at top and bottom. The aperture is very large, has nearly parallel polished sides, and is $1\frac{5}{8}$ inches in the clear. This massive implement is $3\frac{1}{4}$ inches thick; and is represented by Fig. 65, at p. 80. It was found at Killilea, county of Down, and was—*Presented by the Rev. Dr. Hincks*. No. 19, represented as Fig. 64, p. 80, shows the intermediate form of indentation between No. 18, on the one hand, and No. 21, on the other. It is composed of red sandstone, is $5\frac{1}{4}$ inches long, by $2\frac{5}{8}$ broad, behind the aperture, and $2\frac{1}{4}$ thick. The hole is comparatively very small, and has parallel sides.—*Presented by Lord Farnham*. Nos. 20 and 21 are two beautifully formed battle-axe hammers, the first of sandstone, the second of fine-grained hornblendic syenite. No. 20 is $4\frac{3}{4}$ inches long, and $3\frac{1}{2}$ broad at the hatchet-edge; it is more curved in its indented sides, but it does not present the same amount of ornamentation as No. 21; the hole is smooth and round. It was found in the county of Galway, and—*Presented by A. B. Cane, Esq.* No. 21, figured as 66, on p. 80, is the most beautiful specimen of battle-axe hammer discovered in this country. It was found in the river at Athlone, is $5\frac{1}{2}$ inches long, $3\frac{1}{2}$ broad at the hatchet-edge, and was—*Presented by the Shannon Commissioners*.

PUNCHES, cutters, punch-hammers, and pounders, the original type, and the perfect form of which are expressed by the accompanying illustrations, naturally occupy the next place to the hammers. With three exceptions, the sixteen

tools of this class in the Collection have been attached to Tray **XL**, which is placed in the lowest space of the third Compartment. They are all more or less conical, or wedge-shaped, and vary in section from a round, No. 22, Fig. 67, to an oval or elliptical form, No. 35, Fig. 68. The head or upper portion generally bears the marks of hammering, while the lower



Fig. 67. No. 22.

part is usually smooth, and either round or formed into a chisel-edge.

Several of these punches have a groove on the side, more or less indented, round which was twisted a gad or flexible rod, which held it like a blacksmith's punch or chisel in use in modern



Fig. 68. No. 35.

times. In some of the rude forms this indentation is very slight; but in other specimens,—as No. 35, figured above, which is $5\frac{1}{2}$ inches long, by $4\frac{1}{4}$ broad, and composed of hard greenish grit, smoothed all over, and polished at the edge,—it is cut in very deeply. In the absence of any authority whereby to determine the date of such an implement as this, we are led to associate it with the use of metals, and to consider it as coeval with the finer description of hammers figured in the foregoing section.

In the thirteen specimens given on Tray **XL**, we find punches of the rudest and most massive form, as set forth in the following description. Most of them have been procured from the south of Ireland, several from the neighbourhood of Killarney; and as many of them have been found in ancient mines, they are usually associated with mining operations, and have been denominated “miners’ hammers.”* The three most highly finished specimens, Nos. 35, 36, and 37, are placed in Rail-case B.

* In the Rev. W. Hamilton's “Letters concerning the northern coast of the County of Antrim,” we read an account of the discovery, in 1797, of a number of tools in an ancient mine at Ballycastle. See p. 84.

Section III., Tray LL, contains thirteen punches and hammers, so called, numbered from 22 to 34, which, with the three more definitely-shaped examples of this description of tool in the Rail-case, amount together to sixteen specimens. No. 22, Fig. 97, is a massive punch, of gray quartz, $6\frac{1}{2}$ inches high, by $5\frac{1}{2}$ broad at top. It has an indentation chipped into it all round, for adapting to it the gad or holder. It was found at Ross Island, near Killarney, and was—*Presented by Mr. R. Hitchcock*. No. 23, a smaller specimen than the foregoing, composed of white sandstone, weathering brown, is $5\frac{1}{2}$ inches long, and $4\frac{1}{4}$ wide at the top; it was procured from Innisfallen, Killarney, and was the gift of the late Robert Ball, Esq., to Dean Dawson, with whose collection it was purchased. No. 24 is an oval-shaped, rude hammer-punch, of fine gray sandstone, flattened at the ends, and grooved at the sides, $5\frac{1}{4}$ inches long, and 4 wide. Nos. 25, 26, and 27 are three rude implements, fractured by use; found beneath six feet of peat in an old copper mine, in the townland of Boulysallagh, parish of Kilmore, near Skibbereen, county of Cork, and which were—*Presented by Captain H. Thomas* (see Proceedings, vol. ii. p. 64). They are composed of gray, micaceous, gritty sandstone. No. 25, greenish. Nos. 26 and 27 appear to be natural-shaped stones, slightly modified for use; the latter is $6\frac{1}{2}$ inches long. No. 28 is a heavy celt-shaped pounder, of metamorphic slate, with a cutting-edge, very perfect in all respects, $5\frac{3}{8}$ inches in length, by 3 broad. No. 29 is oblong, square-edged, of the massive chisel character, and composed of dark shale; it is $6\frac{3}{8}$ inches long, by $2\frac{1}{2}$ broad at one end, and $1\frac{5}{8}$ at the other, and is $1\frac{1}{2}$ thick; it is blunt at both extremities. No. 30, a rude pounder, 6 inches long, by $3\frac{1}{4}$ broad, of coarse yellow grit. No. 31, a natural-shaped stone, showing scarcely any traces of manufacture, but exhibiting marks of having been used as a punch or pounder; it is $5\frac{1}{2}$ inches long, by $3\frac{3}{8}$ broad, and resembles No. 25. No. 32 is a celt-shaped punch, 9 inches long, by $3\frac{3}{4}$ broad, tapering to a point at top. No. 33, a pounder, or heavy celt, $5\frac{1}{4}$ inches long, by $2\frac{1}{4}$ broad; its thick end is much broken by use. No. 34, an egg-shaped or oval stone, flattened on the sides, $6\frac{1}{2}$ inches long, by $4\frac{1}{2}$

No. 35, in Rail-case B, is a true punch or cutter, with a sharp, wavy edge; it is polished for about an inch up the body of the tool.

of the stone is pitted, except the under side, which is rubbed flat (see Fig. 68); it is $6\frac{3}{4}$ inches long, by $3\frac{1}{2}$ broad, and, together with No. 36, is composed of hard greenish grit. No. 36, is an oval, flattish stone, indented at both sides towards the top; it is $6\frac{1}{2}$ inches long, by 3 broad. No. 37 is of the same character as the foregoing, but sharp at the edge, and $3\frac{1}{2}$ inches long, by $1\frac{1}{2}$ broad; it is formed out of a piece of micaceous green grit.

WHETSTONES—large and small, round and quadrangular—vary in size from No. 48, figured below, which is $7\frac{1}{2}$ inches long, to No. 68, which, with the foregoing, is placed on Tray **MM**, and is only $2\frac{1}{2}$ inches long, but perforated at both extremities. Articles of this nature were used for polishing other stones, or for sharpening and polishing metallic implements of the tool and weapon class. Being always a necessary appliance of art, they have come down without much alteration to the present time, of which examples are afforded in the cutler's oil-hone, and the water rag-stone of the carpenter, or the rough dry-stone for sharpening the scythe or hay-knife. The antique specimens, which are almost invariably composed of sandstone, are usually found in connexion with metal objects, and particularly in crannoges.



Fig. 69. No. 48.

SHELF I., Tray **MM**, contains thirty whetstones, numbered from 38 to 68, and composed, for the most part, of sandstone; several are natural formations, rubbed into their present shape by use. They may be divided into the oblong, flat, round, four-sided, and conical; several of the smaller ones are perforated. In size these tools vary, from No. 48 figured above, which may be taken as the type of the large oblong variety, to No. 68, the last on the Tray, which is only $2\frac{1}{2}$ inches long, by $\frac{1}{2}$ an inch broad. Of the five in the top row, the first is an example of the long four-sided sharpening-stone, and is $7\frac{1}{2}$ inches in length, by $1\frac{1}{2}$ broad. The four next are examples of the flat variety, and average 6 inches in length, by 2 in breadth; they have

evidently been much used, and are all composed of sandstone. The second row also consists of five specimens; No. 43, of a soft variety of whet-slate, is $5\frac{1}{2}$ inches long, $1\frac{3}{4}$ broad, and 1 inch deep; it is a medium between the flat and the long. No. 44, partially natural, of gritty sandstone, has been rubbed round on one side, and flat on the other; it is 6 inches long, by $2\frac{5}{8}$ broad. No. 45, a piece of fine-grained gritty sandstone, nearly natural in shape, but bearing evident marks of having been used in sharpening, may be taken as the type of the round variety. No. 46, in composition similar to the last, is the most perfect specimen of the round variety, being as accurately shaped as if it had been turned in a lathe; it is $6\frac{1}{2}$ inches long, by $1\frac{3}{8}$ broad. No. 47, of coarse white sandstone, $5\frac{3}{4}$ inches long, by $2\frac{1}{4}$ across near the base, and $1\frac{1}{4}$ at the top, is rounded at both extremities, and resembles a stone pestle. No. 48 (Fig. 69), placed across the Tray, and composed of medium-grained white sandstone, is $7\frac{1}{2}$ inches long, by $1\frac{1}{2}$ broad. It is indented at one extremity,—showing the commencement of a hole.

The third row contains five specimens of the flat variety. No. 49, a whet-slate, $5\frac{3}{4}$ inches long, by $1\frac{5}{8}$ broad, and 1 thick, is chisel-edged at the lower end, and round at top. No. 50, of fine sandstone, is a small variety of the former. No. 51, a hard description of whet-slate, is 5 inches in length, flat, square-edged, but broken at the extremity. No. 52, of soft whet-slate, of the same class, but flatter than the foregoing, and imperfect at the end, is $5\frac{1}{4}$ inches in length; it is both perforated and decorated at the top. No. 53, of whet-slate, is an irregular specimen of the long variety, $4\frac{3}{4}$ inches in length. Nos. 54 and 55 are of gritty sandstone.

The fourth row contains six small specimens, the largest of which, No. 56, of sandstone, resembles No. 48, the type specimen, but is only $4\frac{3}{4}$ inches in length, and little more than 1 inch in breadth. No. 57, of sandstone, is perforated at top.

The last row contains nine small specimens, which, with one exception, are all of sandstone, perforated, and averaging $3\frac{1}{2}$ inches in length. The excepted specimen, No. 66, of blue slate, is indented on the surface, possibly by rubbing, and might have been used as a mould for casting metal. No. 68, of sandstone, and much worn, has two apertures.

Nos. 38, 39, 42, 52, and 53, were found in the Ballinderry crannoge, near Moate, county of Westmeath; Nos. 44, 48, and 52, came from that at Dunshaughlin, county of Meath; Nos. 50 and 63 are from the county of Wicklow; Nos. 58 and 59 were found in the Strokestown crannoges, county of Roscommon; and No. 66 came from the county of Tipperary.

In addition to the foregoing, several other whetstones may be seen in the Museum, as part of the typical articles retained together under the head of "Finds."

BURNISHERS.—Under this head may be classed Nos. 69 and 70, in Rail-case B, two small specimens of soft honestone, of a light drab colour; the former of which, here figured two-thirds the natural size, is 4 inches long, $1\frac{3}{4}$ broad, and $\frac{1}{16}$ ths thick, thinning towards the edge. The second specimen,

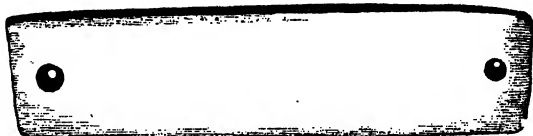


Fig. 70. No. 69.

No. 70, of the same make as the former, is slightly imperfect, and only $\frac{7}{8}$ ths of an inch in breadth; it is, however, beautifully smooth, and polished on the upper surface. These implements, both of which are perforated, might have been used as burnishers. "They were found in a bog at Corren, three miles from Armagh, in the year 1833, in a box bound with a gold band, together with some gold circular plates, and several jet beads of various shapes." They were purchased for the Museum along with the Dawson Collection, and bear the foregoing inscription.

Of the class of burnishers,—tools which must have been in use during the metal age,—may be specified a few natural stones also in Rail-case B, and numbered 71, 72, and 73.

TOUCHSTONES.—In all countries where the use of gold was known, touchstones for testing the purity of that metal were employed by the workers thereof; and hence we find several specimens of such in the Royal Irish Academy's Collection. They appear from their make to have been worn on the person, several being provided with a hole for the at-

tachment of a string. They have been placed along with the small objects of personal decoration, such as beads and rings of necklaces (to which latter they were probably pendants), on Tray **PP**, at the end of the top shelf of the third Compartment, and amount to nine specimens, numbered from 74 to 83. They are of two kinds, flat and four-sided, with and without perforations. The accompanying illustration, the natural size, and composed of quartz, is a good example of the latter variety. As already stated, the black Lydian stone



Fig. 71. No. 81.

is a good material for gold-testing, but most of those implements to which attention is now directed are of a reddish-brown colour, and composed of jasper; a few are quartz rock. Both colours are, however, in accordance with De Boot's description of the true touchstone, which he thus defined:—"Atrum et ferreum habet hic lapis colorem interdum rufum, ad polituram aptus." See p. 11 of this Catalogue.

Tray **PP** contains, on the bottom row, nine touchstones. No. 74 is the largest of the set, 4 inches long, $1\frac{1}{2}$ broad, and composed of jasper slate. No. 75 is an oval, perforated touchstone, also composed of jasper-slate. No. 76,—a four-sided piece of quartz rock, of a reddish colour, and very similar to the type-stone figured above,—is $2\frac{1}{4}$ inches long, by $\frac{1}{2}$ an inch broad in the middle. No. 77, of jasper, long and perforated, $1\frac{3}{4}$ inches in length. No. 78,—flat, rounded at the edge, and perforated, $2\frac{1}{2}$ inches long, by $1\frac{1}{4}$ broad,—is a piece of very fine grit, of a yellowish drab colour, and very hard upon the surface. No. 79, composed of jasper, is $1\frac{3}{4}$ inches long, and highly polished. No. 80, represented by Fig. 71, is, like No. 76, of the sharpening-stone shape, and composed of quartz rock. No. 81, a flat, perforated piece of jasper, $3\frac{1}{2}$ inches long, was—*Presented by Lord Farnham*. No. 82, of jasper-slate, is $3\frac{1}{4}$ inches long, by 1 broad, and $\frac{3}{8}$ ths of an inch thick.

MOULDS.—On the fourth Shelf of the Cross-case, between the first and second Compartments, are arranged sixteen stone moulds, some of great antiquity, and others apparently very modern. Of the former may be specified those which were evidently employed in casting bronze celts and arrows, as Nos. 83 and 85, here figured one-fourth the natural

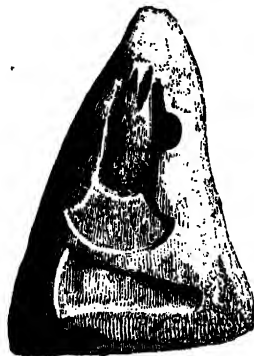


Fig. 72. No. 83.

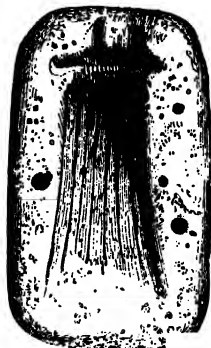


Fig. 73. No. 85.



Fig. 74. No. 80.

size. The first is a triangular piece of coarse white sandstone, indented on both sides for castings;—upon that here presented, we find the mouldings for a simple celt, 3 inches long; and another for one 4 inches long, with a cross stop, and a ring for attachment to the shaft. This stone is $7\frac{1}{2}$ inches long, $5\frac{1}{4}$ wide, and $2\frac{1}{2}$ thick, and was found in the Lough Scur crannoge, county of Leitrim. Lead castings now taken from this mould present us with weapons of which there are many similar in bronze in the Academy. Nos. 84 and 84A are the upper and lower stones of a celt-mould, composed of white sandstone, which came into the Museum with the Dawson Collection, but their antiquity is questionable: if genuine and old, they were never sufficiently finished to have been in use; and if employed now, they would not, in technical language, “deliver.” No. 85, Fig. 73, however, is the half of a celt-mould of undoubted antiquity,—of mica slate, much worn on the surface by age and exposure; it is $6\frac{1}{2}$

inches long, and 4 wide, and presents upon the surface—as shown in the cut—the apertures by which it was adjusted by pins to the other half. No. 90, Fig. 74, is a piece of sandstone, about 3 inches in length, having moulds on three of its sides, so as to economize the material; on that represented on page 91, we find the mould for an arrow which had rings for attaching it to the shaft. No. 92, described below, is for a similar purpose.*

The Moulds, amounting to sixteen, are arranged on the **FOURTH SHELF** of the **FIRST CROSS-CASE**, and numbered in continuation of the Stone Tools, following the Touchstones, from 83 to 97A. No. 83, of coarse white sandstone, a celt mould, of a triangular form (see Fig. 72), shows the side on which two moulds are cut, one for a small, simple celt, apparently of the earliest variety; and the other for a grooved celt, with a stop and string ring. Upon the under side we find the mould of a celt similar to the first, but about 5 inches long. It was—*Presented by Mrs. Lambert*. Nos. 84 and 84A, both sides of a sandstone mould, $6\frac{1}{2}$ inches long,—for a stopped celt, $5\frac{3}{4}$ inches long: it was procured from the county of Carlow, but its antiquity, as already stated, is very questionable. No. 85, of mica slate, much weathered, is a ribbed celt, or paalstab mould, $6\frac{3}{4}$ inches long, and 4 broad (see Fig. 73). On each side may be seen apertures, which, in all probability, fixed it to the upper half-mould in casting. No. 86, a clay-slate mould, apparently unfinished, 4 inches long, by 2 broad. No. 87, a crucifix mould, of red clay-slate, $3\frac{1}{2}$ inches long, by $1\frac{1}{4}$ broad. No. 88, a piece of quartz rock, 5 inches long, indented with several circular apertures on both sides; these may have been used in button-casting, or were formed by the end of a drill, or “bit and brace,” working in them for a long time. It was found at Kil-laderry, near Derryart, and was—*Presented by Lord G. A. Hill* (see Proceedings, vol. iii. p. 24). No. 89, a quadrangular piece of micaceous sandstone, $2\frac{1}{4}$ inches each way,—and presenting on the flat side a circular mould, probably for a harness stud, $1\frac{1}{4}$ inches broad. No. 90, a very curious sandstone weapon-mould, see Fig. 74, about

* See Mr. Du Noyer's valuable Paper upon Celt Moulds in the “Archæological Journal,” vol. iv. p. 327.

3 inches long, and $1\frac{1}{2}$ broad; it has a mould on three of its faces; that represented in the engraving is for a broad arrow with side rings; upon the obverse of this side we find one for a small spear, or leaf-shaped arrow; and on the right side another arrow mould; while the left bears the marks of a worked-out arrow mould. The material being, perhaps, scarce, the block was preserved, and a new mould cut upon it as often as required. It was found at the edge of Lough Ramer, county of Cavan. No. 91 is a piece of sandstone, $4\frac{1}{2}$ inches long, indented with two sharp, well-cut moulds, apparently for harness studs and buckles;—from the county of Antrim. No. 92, a small piece of agalmatolite or potstone—abundant in the county of Donegal, and locally called “Cam-stone”—2 inches in the longest, and $1\frac{1}{2}$ in the shortest diameter; it has on each side a circular mould, either for a button or a harness stud. This was found in the Ballinderry crannoge. No. 93, a piece of clay-slate, $4\frac{1}{4}$ inches square, having three partially finished moulds on the upper surface for casting metal ornaments, probably for horse-trappings; it was found at Tullylaggan, Desertcreat, county of Tyrone, and was—*Presented by T. Greer, Esq.* No. 94, a flat piece of green grit, 3 inches long, by 2 wide, with an ornament mould on each side. No. 95, a piece of rottenstone slate, about 2 inches square, having several circular moulds, probably for casting shot, and bearing the date 1631. No. 96, a piece of soft chloride slate, $2\frac{1}{2}$ inches long, and formed into an arrow-mould; it was found at Dundalk, and—*Presented by P. Brophy, Esq.* No. 97, a fragment of sandstone mould, found in the Dunshaughlin crannoge, is $3\frac{1}{2}$ inches in the longest diameter. No. 97A, a small slab of brown slaty sandstone, 5 inches across, bearing some circular marks like moulds, and two incised crosses, possibly not of any great age. It was found at Kilmury church, Minard, near Dingle, and—*Presented by G. V. Du Noyer, Esq.*

OVAL TOOL-STONES.—In most collections of Celtic antiquities may be seen oval or egg-shaped stones, from 4 to 5 inches in the long diameter, and more or less indented on one or both surfaces; their use is at present problematical. The examination of an isolated specimen will afford us little assistance in solving the question of the purpose to which they

were applied ; but, grouping several together, we arrive at some idea respecting their use, as may be seen by inspecting the Collection on Tray **NN**, in the top shelf of the Third Compartment. They were evidently tools, and are denominated *Tilhugger-steens* by Northern antiquaries, who consider them chippers of flint or stone, and believe that, in-working, they were held between the finger and thumb applied to these side cavities. On placing a series of them in a row, we get some insight into their use, as we then perceive that the indentation on the side, which has been chipped or picked out with a punch of some description, is but the first step in the process of the formation of a hole, either for the handle of a hammer, or to make it into a ring-stone for a net, or some such object. Some of these stones are natural water-washed pebbles ; others are evidently shaped by art. The accompanying



Fig. 75. No. 98.

illustration, Fig. 75, No. 98, affords a good idea of one of these implements ; it is 4 inches long, by 3 wide, and composed of pink felspar. As we follow on the series to the second row upon this Tray, we find the indenta-



Fig. 76. No. 115.

tion getting, in each specimen, deeper and deeper, until it passes through ; and the object then becomes converted into an oval ring, such as may be seen in No. 115, Fig. 76, here figured one-fourth the natural size, and which may have been used as a sink-stone or net-weight, similar to those upon the fifth row of this Tray.

SINK-STONES, for either nets or fishing-lines, are by no means rare, as they continue in use even to the present day ; and quoit-like discs, of sandstone, from 4 to 6 inches in diameter, and with a hole in the centre to attach them to the bottom-rope of a net, are not uncommon in localities where lead is scarce. Some of these may be seen on the third shelf of the Second Cross-case, Nos. 10 to 14. But, besides these rude implements, we find others formed with more care, and

which are generally supposed to have been attached to either lines or nets; for example, No. 32, Fig. 77, in Rail-case B,—here figured one-fourth the natural size, and composed of soft white sandstone, traversed by a vein of quartz,—



Fig. 77. No. 32.

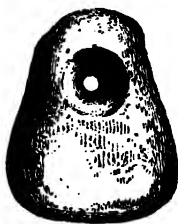


Fig. 78. No. 123.

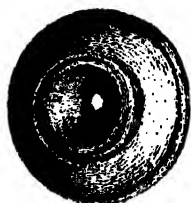


Fig. 79. No. 10.

is encircled by a groove round the long axis for retaining a string or thong; and No. 123, Fig. 78, on Tray NN, is a plummet-like piece of sandstone, $3\frac{1}{4}$ inches long, with a hole at the small extremity. Of this latter class we find a very beautiful globular specimen, No. 122, formed out of a very heavy limestone-and-ironstone nodule. It is $9\frac{1}{2}$ inches in circumference, and has a projection above for the attachment of a string. While these three stones would form useful sink-stones, still we have no direct authority bearing upon the subject; and it has been conjectured that the stone represented by Fig. 77 was one of the "Flail-stones" attached by a thong to a stick, used in early Irish warfare, and to which some allusion is made in the account of the feats of the Ulster champion, Cucullin. On the other hand, a perforated stone (especially No. 122, which has been formed with great care) might have been used as a plummet, or the weight for a steelyard or ounce, an implement in much more frequent use than a beam and scales in the western parts of Ireland, up to a very recent period. The circumstance of No. 123 being discovered near the wall of the church of Innisboheen, county of Wicklow, rather confirms the supposition of its being a plummet.

Of the variety of perforated circular stones possibly used

as net-weights, the beautiful specimen, No. 10 (Fig. 79), in the second Cross-case, and here figured one-fifth the natural size, may be given as a perfect example. It was evidently turned in a lathe, out of a piece of sandstone, and is $4\frac{1}{2}$ inches in the long diameter, and 3 thick.

Upon the bottom of this Tray may be seen four stone discs, varying from 3 to $4\frac{1}{2}$ inches in diameter, and averaging $\frac{1}{2}$ an inch thick; they are accurately smoothed upon the flat surface. Such stones are not uncommon in crannoges; their precise use has not been determined; if larger, they might have served as griddles.

SHELF I., *Tray NN*, contains thirty articles of a miscellaneous description, between Tools and Food Implements, and numbered from 98 to 127. The two first rows are, with one exception, egg-shaped or circular stones, indented upon one or both sides, as shown by the foregoing cut, Fig. 75, from No. 98, which is $4\frac{1}{4}$ inches long, and 3 wide. It is not quite symmetrical in shape, being, probably, a natural pebble, smoothed by art upon the surface; it is indented upon both sides, the hollows, which have rounded edges, approaching to within $\frac{3}{4}$ ths of an inch; it is composed of pink felspar, a rather rare rock in Ireland. No. 99, a similarly shaped stone, but of basalt, $4\frac{1}{4}$ inches long, by $2\frac{3}{4}$ wide, and smoothed on the surface; it is indented on both faces, but by shallower hollows than the foregoing; the edges of these hollows are also sharper. Upon the surfaces of both these indentations we find rude carvings; that here presented to view bears the figure of a man. No. 100, an egg-shaped stone, $3\frac{1}{2}$ inches long, by $2\frac{1}{2}$ broad, indented upon both sides, and composed of coarse white sandstone. No. 101, of the same type as the foregoing, but rather flattened on the sides, is $3\frac{3}{8}$ inches long, and $2\frac{1}{4}$ broad; the hollows are narrower, deeper, and rounder, compared with the size of the stone, than in the foregoing specimens; it is composed of white sandstone. No. 102, of white sandstone, decomposing; $2\frac{3}{4}$ inches long, and $2\frac{1}{4}$ broad; indented on both sides, but much more slightly than any of the foregoing. No. 103, of sandstone, a small but very perfect specimen, $2\frac{3}{4}$ inches long, by $2\frac{1}{8}$ wide, is deeply indented on both sides; it was dug up in a field near

Trummery church, county of Antrim. No. 104 is a piece of quartz rock, of an oval shape, and wrought with great care, something more than $2\frac{1}{4}$ inches long, and rather less than 2 broad; it is indented on one side, the mark of the tool on which may still be seen. No. 105, of sandstone, the smallest specimen of this variety of tool, being only $1\frac{3}{4}$ inches in the long, and $1\frac{1}{8}$ in the short diameter; it is indented on one side only, and so resembles a miniature urn or drinking vessel in process of formation. No. 106, a piece of earthy limestone, formed into a circular cup-like implement, $1\frac{3}{4}$ inches in diameter, and, like the two foregoing, hollowed upon one side only. No. 107, a disc of red sandstone, $2\frac{5}{8}$ inches in diameter, and 1 thick, having a small indentation on the upper surface, and slight, smooth marks on the circumference at opposite sides, as if it had been compressed in a machine. No. 108, a hammer-like implement of fine grit, with an indentation around it, similar to that on some of the punches, as if for a gad or holder; it also has been excavated to a certain depth, as if for a handle; but, from the oblique direction which the aperture took, it may have been rejected; it is 3 inches long, and $2\frac{1}{8}$ wide. These eleven articles upon the two first rows show the varieties of this implement, as well as the process by which the aperture was formed.

The third and fourth rows present us with twelve articles, in which the indentation has become an aperture, in some cases so large as to render the implement a mere ring. No. 109 is an egg-shaped stone, similar to those upon the first row; composed of quartz rock, smoothed on the surface; $3\frac{5}{8}$ inches long, and $2\frac{1}{2}$ wide, deeply indented on both sides, the hollows meeting by an aperture the size of a goose-quill. No. 110 approaches the circular form, is 3 inches in the long, and $2\frac{1}{2}$ in the short diameter; the side hollows meet by an aperture in which the fore-finger may be inserted; it is of sandstone. No. 111, a flat, oval piece of ferruginous sandstone, $3\frac{1}{4}$ inches long, by $2\frac{1}{4}$ broad, the side indentations opening by a hole the size of a quill barrel. No. 112, of gray sandstone, is nearly circular, and $2\frac{3}{8}$ inches across the hollows, which are so deeply splayed as to meet the edge; they open by an aperture $\frac{3}{8}$ ths of an inch wide. No. 113, a ring of quartz rock, $2\frac{1}{8}$ inches in the long diameter. No. 114, of fine-grained iron-sandstone, is an oval-shaped implement,

$2\frac{1}{2}$ inches in the long diameter, with the sides of its small aperture more nearly parallel than in any of the foregoing. It was found at Moss-side, near Ballycastle, county of Antrim. All the specimens on the fourth row are rings. No. 115, a piece of conglomerate sandstone, in shape resembling the egg-shaped implements in the top row, is $3\frac{1}{4}$ inches long, and 2 wide; the splay of the aperture in the long direction is $1\frac{5}{8}$ inches, and the hole, in the clear, sufficient to admit the finger-top. No. 116, an oval ring, of limestone, containing fossil *Syringopora*; it is 3 inches long, and $1\frac{5}{8}$ broad, the hole being nearly $1\frac{1}{4}$ inches in diameter (see Fig. 76). No. 117, a sandstone ring, 2 inches in the long diameter, and $\frac{5}{8}$ ths of an inch in the clear of the bore, was found at Ballinderry, King's County, and—*Presented by F. W. Burton, Esq.* No. 118, another ring, of about the same size, composed of coarse iron-sandstone. No. 119, of grit, a bead-like ring, $1\frac{3}{4}$ inches in the long diameter, with a small aperture. No. 120, one-half of a sandstone ring or bead, $3\frac{1}{2}$ inches long, and $1\frac{3}{4}$ thick; the hole is scarcely $\frac{3}{4}$ ths of an inch in diameter. This article was turned in a lathe, as may be seen by the circular lines upon its surface.

The three articles upon the fifth row were either weights, plummet, or sink-stones. No. 121 is a unique article of its class, being a nearly cubical piece of dark coarse grit, about $2\frac{1}{4}$ inches on each side; it is deeply indented at top and bottom,—the excavations opening into one another by a small aperture; it would form an admirable net-weight. It was—*Presented by Lord Farnham.* No. 122, a plummet-shaped stone, $3\frac{1}{4}$ inches in the longest diameter of the globe at top; it is provided with a projection through which an aperture has been drilled. This beautifully shaped article, which is formed out of a heavy limestone-and-ironstone nodule, is extremely ponderous for its size. It is rather heavy for a plummet, and too carefully formed for a net-weight, but would have made a good sink-stone for a deep-sea fishing-line; or it might have formed the weight of an ounce or steelyard. No. 123, the plummet or sink-stone represented by Fig. 78; it is $3\frac{1}{4}$ inches long, and $2\frac{5}{8}$ across the widest portion; it is composed of sandstone, and was found near the church of Innisboheen, county of Wicklow.

Upon the last row are placed four flat stone discs, the three first

circular, the last oval. No. 124, of very fine sandstone, is $4\frac{1}{4}$ inches in diameter, and $\frac{5}{8}$ ths thick. No. 125, of very fine grit, beautifully smoothed and regular, is $3\frac{7}{8}$ inches in diameter, and $\frac{1}{2}$ an inch thick; it was found at Portaferry, and was—*Presented by Arthur R. Nugent, Esq.* No. 126, of sandstone, is $3\frac{1}{2}$ inches in diameter, and about $\frac{1}{4}$ th of an inch thick. No. 127, the oval specimen alluded to, also of sandstone, and bevilled towards the edge, is 4 inches in the long, and 3 in the short diameter.

As already stated in the introduction, man, in his primitive condition, is a nomadic hunter and fisher, directing his migrations according to the amount and procurability of food. For sustenance and clothing he trusts to the chances of the chase; and for tools and weapons, to the timber of the forest, and the flint and stone placed by nature within his reach. Yet even in this state he is essentially a cooking animal, and requires certain appliances consequent thereon. As he advances in civilization, the hunter generally becomes a shepherd, but, to a certain extent, continues a nomad, wandering with his flocks wherever pasture or security invite. Finally, when he has acquired a knowledge of cereal food, he becomes stationary, and not only cultivates the ground, but of necessity encloses it;—yet he lives only in part by the sweat of his brow, combining his present with his previous occupation, and occasionally resorting to the chase for amusement as well as sustenance.

So late as the sixteenth century the native Irish retained their wandering habits, tilling a piece of fertile land in the spring, then retiring with their herds to the *Booleys*, or dairy habitations (generally in mountain districts) in the summer, and moving about where the herbage afforded sustenance to their cattle.* They lived, as Spenser described them in the reign of Elizabeth, “on their milk and white meats” (curds,

* In the summer of 1835 I visited one of these *booleys* in the island of Achill. See my description of these summer residences in the “*Dublin University Magazine*” for March, 1854.—W. R. W.

cheese, with meal, and probably calves' flesh, &c.), and returning in autumn to secure their crops, they remained in community in their Forts or entrenched villages during the winter. The remains of thousands of these Forts or Rathes still stud the lowlands of every county in Ireland, notwithstanding the thousands which have been obliterated.* They are earthen enclosures, generally circular, and varying in extent from a few perches to an acre or more,—and afforded protection to the inhabitants and their flocks against the ravages of beasts of prey, with which the country then abounded; or against the predatory incursions of hostile tribes, either in war or during a cattle raid. A breastwork of earth, from 4 to 8 feet high, surrounded the enclosure, being the material ready at hand and most easily worked, and was probably surmounted by a stake fence. In some a ditch surrounded the earthwork. Upon some of the plains, as well as the hill-sides, stone fortresses were occasionally erected, where such material abounded loose on the surface, or could be procured in the neighbourhood without quarrying. These Duns or stone forts were always put together without cement; but they are more of a military than a domestic nature. In the circle of these forts, both stone and earthen, there existed chambers and galleries, which probably served as granaries or places of security for the preservation of valuables, and to which the young and weak might resort in case of invasion, or any sudden attack. They were formed by large upright stones, covered with flags laid across the top, and in them have been found many relics of past times, and quantities of bones, particularly those of goats and deer. Several of these caves and passages are now open, and they, as well as the forts themselves, are regarded with great veneration by the peasantry,—a fact which has tended in no small degree to their preservation. The population of Ireland

* Thanks to the care taken by the officers of the Ordnance Survey of Ireland, under the direction of Lieutenant (now Colonel) Larcom, every Rath which then existed has been marked on the Government Maps.

when these raths and duns were made, must have been comparatively small; and, owing to the rivalry of petty chieftains, and possibly the incursions of foreigners, men were obliged to herd in small communities for defence against their enemies; yet it may be asserted that in no other country in Europe are the primeval traces of its inhabitants more numerous or better marked than in Ireland.

There were other habitations called Cashels and Cahirs, always of stone, whereas raths or lisses were invariably composed of earth, as they exist chiefly on the plains. Duns or hill-fortresses are generally of stone, but occasionally of earth. In some instances we find a tumulus or a cromlech within the circle of the rath, the chieftain or hero having been, in all probability, buried within the fort where he resided, or which he had died in defending, as in the great rath of Dun-Aillinne, near Old Kilcullen, and in the Giant's Ring, in the vicinity of Belfast.

Other stone buildings, generally circular, and closed at top by a hive-shaped dome, are not unusual, and are of two kinds, single or aggregated, and either connected by passages or opening into a central chamber similarly constructed. The former are generally oratories; the latter often subterranean, and are to be met with in the county of Kerry in particular.

To each of these forts, called raths, lisses, duns, cahirs, or cashels, were attached names which, with some modifications, have descended to modern times, such as Dun-Ængus, Dun-Dermott, Dun-more, Dun-Gannon, Dun-Boync, Dun-Lavin, and Dun-Dealgan (now Dundalk); Lis-more and Lis-Towel; Rath-Cormac, Rath-Core, Rath-Croghan, Rath-Owen; Cashel; Cahir-aulin, Cahir-Conlish, &c. Many of these forts give names to townlands, which, with other topographical appellations, have been transmitted to us for, at least, two thousand years. In the ordinary domestic raths resided single families, or chieftains and their clans; and in the more extensive

ones, petty kings, chieftains, and their retainers and soldiers. To this latter class belonged the royal raths of Tara, Emania, Croghan, Uisneach, Tailtin, the Grianan of Aileach, Tlachtgha, and the acropolis of Cashel, &c.*

The people resided in wooden houses, or huts constructed of wattles and tempered clay, within these enclosures; or in small stone habitations where such material abounded. Within and around the great fort of Duv-caher, "the black caher," in the large island of Aran, may be seen the whole arrangement of the cabins or stone houses, called *Cloghauns*, in which the people lived, and some of which have still their roofs perfect. Around these raths must, in process of time, have been cultivated corn and other kinds of vegetable food, which usually succeed in the order of civilization, to hunting and cattle-feeding; and thus, in process of time, by necessity, native ingenuity, or the imitation of foreigners, were introduced various arts which constituted these raths centres of civilization; and around them we still find some of the finest pasture land in Ireland.

With our Celtic ancestors' condition as shepherds, and the nature of their flocks and domestic animals, as well as the beasts of prey by which they were surrounded, we shall have to treat when we come to consider the animal remains in Section IV. We have now to observe upon man's state, as an agriculturist, in arranging and illustrating those antiquities which remain to us, of the species employed in preparing food, particularly meal, among the implements in the Stone Collection.

* For an account of the military architecture of the early Celtic Irish, see the description of Staigue Fort, a model of which stands in the first Compartment, and is given in Species IV., under the head of Household Economy, p. 120.

Besides the various forts, as they are termed, enumerated above, there were other strongholds, denominated Crannoges, or stockaded islands, to which reference has been frequently made in the foregoing text, and a full account of which will be found in the description of Class III., Vegetable Materials.

SPECIES III.—FOOD IMPLEMENTS.

AGRICULTURAL IMPLEMENTS of stone could never have been very numerous in Ireland, yet other countries, even in the present day, supply examples of portions of both the plough and harrow composed of stone. A large, long-handled, stone celt would form a sufficiently useful mattock to disturb the surface of the ground, and prepare it for the reception of a corn crop. The two accompanying illustrations, Figs. 80 and 81, bear so great a resemblance to rude primitive ploughshares, that one is constrained to look upon them in that light; while the great slate celt, No. 323, page 43, may be likened more to a plough-coulter than a hatchet. The first



Fig. 80. No. 1.

of these implements, composed of yellow sandstone, is $7\frac{3}{4}$ inches long, and $2\frac{3}{4}$



Fig. 81. No. 2.

across the widest part; it is very smooth, and has an even, sharp edge. The second, composed of crystalline greenstone, Fig. 81, is $13\frac{1}{2}$ inches in length, and 4 broad; it has a hole, which is decorated round the margin on both sides, cut obliquely through one extremity. A thong passed through this aperture would help to secure it in a wooden socket. But whatever might have been the means employed in cultivation, it has been well established that grain food, particularly wheat, both white and red, and probably oats and rye also, were grown in Ireland long before the Christian era; and corn crops, according to our annals, suffered in like manner as in modern times from atmospheric vicissitudes or pestilential epiphytics. Thus we read that during the ten years' reign of Eochy, last King of the Firbolgs, from

A. M. 3294 to 3303, a great drought occurred, "notwithstanding there was abundance of grain and fruit" (*Annals of Clonmacnoise*); and again, in 3972, according to the chronology adopted by the Four Masters, the earth was so fruitful in the reign of Fiacha-Finnailches, "that it was difficult for the stalk to sustain its corn." Traces of tillage and land bearing the track of the plough have been discovered on hill-tops and other localities that have long since fallen out of cultivation.*

GRAIN-RUBBERS for triturating corn are, perhaps, the most primitive implements used in the manufacture of cereal food. Each consisted of a flag or flat stone, slightly hollowed upon the upper surface, so as to hold the parched grain, and a convex rubber or mullet, which was passed backwards and forwards with the hand, and thus bruised the corn into meal. The accompanying illustration, Fig. 82, drawn from No. 2, in the lowest shelf of the first Compartment of the Northern Gallery, affords a good ex-

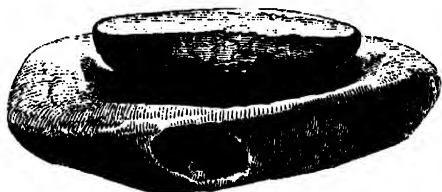


Fig. 82. No. 2.

ample of the grain-rubber; and when we consider the immense length of time that all nations acquainted with the use of corn have known how to work the rotary quern, this must be indeed an implement of extreme antiquity. It is 1 foot $4\frac{1}{2}$ inches long, 11 inches broad, and averages 4 inches in thickness; it is formed out of a piece of sandstone, and is remarkable for having a hole worked into the side, through which a string might have been passed, either for hanging it up or carrying it. Its rubber, No. 2A, also shown in the foregoing illustration.

* See Dr. O'Donovan's original "Essay on the Antiquity of Corn in Ireland," in the "Dublin Penny Journal" for September, 1832, vol. i. p. 108. See also the Author's "Report on Table of Deaths," in the "Irish Census" of 1851, vol. i. part 5, for all the references concerning corn.

tion, is 11 inches long, and formed out of the same material.

We possess four concave and five convex stones of this variety in the Collection ; the latter being more likely to be preserved, and less liable to injury than the former. Of these convex stones, No. 5 is nearly a hemisphere, and must have worked in a small oval indentation. Early as these implements were employed, those who used them evidently sought for the material most likely to make an efficient millstone. These rubbers give us the first idea of a mortar, of which examples may be seen in the Second Cross-case, especially Nos. 27 to 31.

QUERNS are evidently the next step in food-making machinery, and the Academy possesses a fine collection of them, thirty-five in number, some perfect, others wanting the upper or the lower stone. Although there are several varieties, as may be seen by an examination of these articles in detail, the most simple and natural division of them is twofold. The first is that in which the upper and lower stone are simply circular discs from 12 to 20 inches across ; the upper rotating upon the lower by means of a wooden handle, or sometimes two, inserted into the top,—and “fed” or supplied with corn by an aperture in the centre, analogous to the hopper, and which may be termed the “grain-hole” or eye. The meal, in this case, passed out between the margins of the stones to a cloth spread on the floor to receive it. The upper stones are usually concave, and the lower convex, so as to prevent their sliding off, and also to give a fall to the meal.

The second variety is usually called a Pot-quern, and has a lip or margin in the lower stone, which encircles or overlaps the upper, the meal passing down through a hole in the side of the former. Most of this variety are of smaller size than the foregoing, which is evidently the more ancient and the simpler form, as well as that which presents us with the greatest diversity.

The upper stone was turned either by a wooden handle—

sometimes by two—or, in some of the larger specimens, by a lever placed nearly horizontal, and of which an example may be seen in No. 23; or it was occasionally worked by means of a wooden lid or cover, with projecting arms, to which ropes were attached, or a small animal might be harnessed, and of which a very curious specimen will be found among the wooden materials, No. 12. Generally speaking, however, “two women sat grinding at the mill,” which was placed upon the ground between them; with one hand they turned the top stone by means of the handle, either held by both together, or passed from one to the other; and with the other hand they poured the grain into the eye or hopper.

The lower stone is generally perforated for a pivot, or spud, usually of wood, but sometimes of iron, which passed into the aperture of the upper stone, where it was supported upon a cross stick or piece of iron; and by the application of leathern washers between the pivot and the socket in which it worked, the distance between the stones could be increased, and so the meal ground coarse or fine as required.

The old English name for the upper stone was the “rider” or “runner,” and for the lower the “lier” or “ass.” In Irish the quern was called *Bro*, from the verb *bro*, frangere, to break, to grind. The lower was called the *Bro iochtair*, and the upper the *Bro uachcair*. In material, querns do not offer great variety, being chiefly composed of different descriptions of sandstone, sometimes of quartz rocks, occasionally of gneiss, and in some instances of granite; but in all the perfect specimens in the Academy the upper and lower stones are of the same material.

The accompanying illustrations show the various forms of querns in the Collection. The convex top-stone, No. 17, Fig. 83, figured on the opposite page, exhibits the first attempt at decoration, having a deep hollow, with a raised edge round the central aperture, so as to constitute a very perfect hopper; and an oval indentation surrounding the handle-hole. It is 16 inches in diameter. Another form of decoration is

that shown on No. 19, Fig. 84, the top stone of a quern, 18 inches in diameter, and decorated with the ancient Irish cross, carved in relief, the arms of which are enclosed within a circle. It was probably a church quern. The handle-hole, as in the first illustration, passes through, and is placed in one of the arms of the cross. There were occasionally two handle-holes, and in some specimens are to be found the remains of a

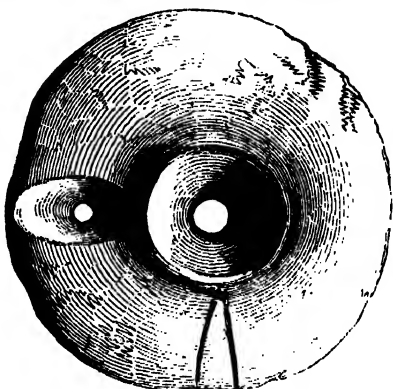


Fig. 83. No. 17.

third, an examination of which will show that the original hole had been worked out (see No. 29A). This form of decoration, although rare, finds three representatives in this Collection, Nos. 19, 20, and 21,

and an examination of these quern-tops will show that it was part of the original design. Dr. Petrie has described and figured the top-stone of a decorated quern, which had been used as a tombstone in the cemetery of Clonmacnoise; it also may have been

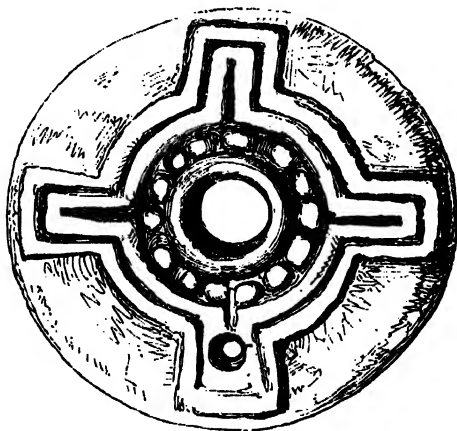


Fig. 84. No. 19.

decorated originally, although afterwards used as a tombstone; and the name (which is its chief characteristic) subsequently carved upon it.*

* See Petrie's "Ecclesiastical Architecture of Ireland," p. 349.

Another variety of the simple quern is that in which the top-stone, in particular, is very massive and heavy, so as, in some specimens, to be only capable of being turned by a lever inserted into it, at nearly a right angle, and which was evidently rotated by one or more persons walking round the mill. No. 25, which stands in the tripod of the Second Compartment, is a good example of this description of quern; and No. 22, Fig. 85, here figured, is the heavy top of a quern of this description, but of small size, and the hole in which is placed in a projection from the side.

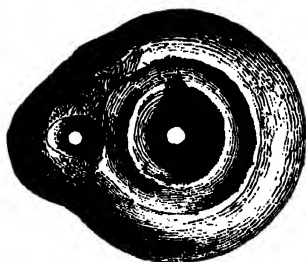


Fig. 85. No. 22.

Of the second kind of hand-mill, denominated a pot-quern, the accompanying illustration (Fig. 86) affords us a good idea.

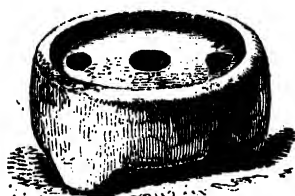


Fig. 86. No. 31.

It is 9 inches in diameter and 4 high; it stands on three feet, and had evidently been long in use. The top stone, with two handle-holes, is represented in this figure, as also the meal-hole, which is cut obliquely through the lower margin. This form of mill need not, of necessity, have been provided with a pivot, as the lip of the lower stone retained the upper *in situ*.

The antiquity of Querns or hand-mills, *lamh-bro*, in Ireland is very great, yet they continue in use to the present day.* One of the causes assigned for their discontinuance is that of certain prohibitions against them in some localities in Ireland, as well as in Scotland, in which latter country laws

* During the famine period, many of the hand-mills, which had long been given up, were again employed, particularly in hilly districts, or where the ordinary water-mills were not accessible. So late as the summer of 1853, I purchased a quern at work in the neighbourhood of Clifden, Connemara.—W. R. W.

to the same effect have been long in force; the object being to make the peasantry grind the corn at the proprietor's water-mill.*

The principle of the stone quern remains the same to the present day, the propelling force or power being alone altered. One of our oldest legends relates a romantic story respecting the origin of the first water-mill in Ireland, which is said to have been erected by King Cormac, at Tara, in the third century, and the site of which can still be recognised, as also that of many other very ancient mills, such as the mill of St. Fechin at Fore, and that of St. Maelruan at Tallaght, at which Ængus the Culdee worked. The Brehon Laws frequently allude to ancient mills of both hand and water-power. The following description of the extensive collection of these objects in the Museum will sufficiently illustrate this subject:—

GRAIN-RUBBERS AND QUERNS, according to their several varieties, amount to as many as thirty-five, and are arranged on the lower shelves of the three first Compartments, and the second Cross-case. No. 1 is a grain-rubber, composed of fine granite, 21 inches long, by 12 broad, well finished, having a raised ridge crossing the under side, probably to strengthen it. No. 1A, the rubber of ditto, of the same material, 1 foot long, by $5\frac{1}{2}$ inches broad. No. 2, a grain-rubber, $16\frac{1}{2}$ inches in length, and 11 broad in the widest part. See Fig. 82. It is more dishd than the former, and is composed of coarse sandstone. No. 2A is the rubber of the foregoing, 11 inches long, by $5\frac{1}{2}$ broad, and composed of the same material. They were found in a bog near Clogher, county of Tyrone, and were—*Presented by J. Hubaud Smith, Esq.* No. 3, a grain-rubber 18 inches long, by 10 broad, of sandstone, very shallow; found in Faughanvale, county of Derry.

* Upon the subject of Irish Querns, see Mr. J. Hubaud Smith's Paper in the Proceedings for February 24, 1840, vol. i. p. 390; also the Rev. Dr. Hume's "Remarks on Querns," London, 1851; and the "Dublin Penny Journal," vol. iv. p. 295. See likewise the "Ordnance Survey Memoir of Londonderry," p. 215; and Dr. Petrie's "Essay upon the History of Tara Hill," in the "Transactions of the Academy," vol. xviii.

No. 3A, the rubber of same, 8 inches long, by 6 broad, very convex. No. 4, an imperfect grain-rubber of coarse micaceous sandstone, slightly dished, 11 inches every way. No. 5, a rubber of granite, nearly circular, 5 inches across. No. 6, another rubber of the same material, but of a pinkish colour, 6 inches long, by 5 broad.

QUERNS.—No. 7, of sandstone, the top-stone of a quern, rude and unfinished on the upper surface, upon which are two handle-holes, each sunk about $\frac{3}{4}$ ths of an inch; it measures little more than 1 foot across. It was found in the parish of Balteagh, county of Derry. No. 8, the thin top stone of a quern, 16 inches across, of micaceous quartzite, smooth upon the grinding surface, but left quite rude and unfinished above; the handle-hole passes through, and the grain-hole is $2\frac{1}{2}$ inches in diameter, but not quite central. It was found in a crannoge in Drumaleague Lough, county of Leitrim, and was—*Presented by the Board of Works*. No. 9, of red sandstone, the under portion of a quern, the bottom surface left unfinished; it is $15\frac{1}{2}$ inches in diameter, and 2 inches thick. The margin of the central aperture for the pivot is slightly raised, so as to give a grip to the upper stone. It was found in a rath in Ballybowler, county of Kerry, and was—*Presented by Mr. R. Hüchcock*. No. 10, the upper stone of a large quern, of gneiss, slightly dished; it has a rounded edge, and is about 18 inches across; the handle-hole runs through obliquely. Nos. 11 and 11A, both stones of a quern, similar in material to the last, 17 inches across, measuring together only 3 inches in depth; the pivot or spud-stick remains in the lower stone. They were found in a crannoge, and—*Presented by the Board of Works*. No. 12, the massive under stone of a quern, 15 inches in diameter, $2\frac{1}{2}$ in thickness, and composed of red sandstone; it slopes from the spud hole, which is unusually large. No. 13, the small upper stone of a quern, $11\frac{1}{2}$ inches across, dished, has a large grain aperture and three handle-holes placed at nearly equal distances; it is of gray sandstone. No. 14, a fragment of the upper stone of a quern, $17\frac{1}{2}$ inches across, and $3\frac{1}{2}$ thick, of granite. A ridge or bar surrounds the aperture, which is 4 inches wide. It was found at Milverton, near Dublin, and was—*Presented by George Woods, Esq.* Nos. 15 and 16, both stones of the largest quern in the Collection, of quartzite sandstone, the under (No. 16) is $20\frac{3}{4}$ inches long, by $3\frac{3}{4}$ thick; the aperture for the pivot is $1\frac{3}{4}$ inches deep, and the same across,

and is surrounded by a raised lip, which served to keep in its place the upper stone. No. 15 is $19\frac{1}{2}$ inches in diameter, by $2\frac{3}{4}$ in thickness; the grain aperture is $3\frac{1}{2}$ inches wide, and bears upon the under surface the mark of the cross-bar of the pivot; its upper surface has been left in a rude state; it has one handle-hole. They were found in a crannoge in Lough Scur, county of Leitrim, and were—*Presented by the Board of Works*. (See Proceedings, vol. v. Append., page 60.) No. 17, the top stone of a large quern, dished on the inside, decorated above, having a projecting lip encircling the grain aperture, and an oval indentation round that for the handle (see Fig. 83). It fines off from the central aperture towards the edges, and is composed of fine-grained granite or elvine. It was found in the river Dee, townland of Ballygowen, parish of Richardstown, and county of Louth, during the drainage operation in 1845, and was—*Presented by the Board of Works*. No. 18, the largest top stone of a quern in the Collection, of sandstone, measuring 20 inches in diameter, and 3 in thickness, of a variety similar to the foregoing, being ornamented on the upper surface by an elevation round the grain-hole, and which is prolonged to the handle-hole. It is dished upon the inside, and convex upon the upper surface; it was, with No. 21—*Presented by the Rev. Thomas H. Porter*. No. 19, the upper stone of a quern, decorated with the old Irish cross contained within a circle (see Fig. 84). It is 18 inches in diameter, and $2\frac{1}{2}$ in thickness; the handle was placed in one of the arms of the cross. It is composed of sandstone, and the ornamentation is in high relief. This beautiful specimen was found in a crannoge in Roughan Lake, near Dungannon, county of Tyrone, and was—*Presented by W. Pike, Esq.* No. 20 is a fractured ornamented top-stone of a quern of sandstone, 18 inches across, and having 3 handle-holes. It differs from the former in the lines of the circle and three-armed cross being sunken instead of raised; it was—*Presented by the Dean of Kilmacduagh* in 1840. No. 21, a fragment of the decorated top stone of a quern, of sandstone, found in the outer ditch of the rath called "O'Neill's Fort," midway between Stewartstown and Cookstown, county of Tyrone. No. 22 is the small, heavy top of a quern (Fig. 85), 12 inches in the longest diameter, where the handle-hole is in a portion projecting beyond its general circumference; it is 5 inches high. The handle-hole goes through, and the grain-hole

is deeply excavated, as shown in the cut. No. 23, together with the two following, is placed in the tripod standing on the floor of the second Compartment. It is the rude top stone of a heavy grinding quern, and is formed out of a piece of Galway syenitic granite, 1 foot in diameter, and 7 inches in height. The grain aperture is very peculiar, forming a double cone meeting in the centre like an hour-glass, the openings being $3\frac{1}{2}$ inches wide both above and below, while the small oblique aperture by which they are united scarcely admits the point of the finger. Upon the outside curvature we find a square-edged aperture, evidently for the insertion of a metal bar, by means of which this heavy millstone was rotated. It was—*Presented by J. P. O'Malley, Esq., of St. Oran's.* Nos. 24 and 24A, both stones of a perfect quern, of sandstone; together they stand $6\frac{1}{2}$ inches high, and 15 across; they are remarkably well finished, the grinding surfaces being slightly concave and convex; the grain-hole is much dished, and a projecting ridge rises round the handle-hole. This quern was found in a rath, near Navan, county of Meath, and was—*Presented by W. F. Wakeman, Esq.* (See Proc. for June 22, 1857). Nos. 25 and 25A is a very heavy quern, like Nos. 22 and 23, and remarkable for the upper stone being larger and heavier than the lower. It is 14 inches across, and $12\frac{1}{2}$ high; the grain aperture is surrounded by a fillet; the upper stone has an indentation upon the side for the insertion of an iron bar, and it was probably moved by a person walking round it. These two stones are highly finished all over, and rest on a flat stone disc, which is 20 inches across, and $2\frac{1}{2}$ thick, with a small oval aperture in the centre. It does not appear to be a quern, but might have been used in early times as an anchor.

POT QUERNS.—No. 26, of hard sandstone, the under stone of the largest specimen of this variety, $13\frac{1}{2}$ inches wide, by $8\frac{1}{4}$ deep. The lip or projecting ledge is $1\frac{3}{4}$ inches thick, and $2\frac{1}{4}$ thick, leaving the inner circle 10 inches in diameter; the central wooden spud or pivot still remains; the meal-hole is a four-sided aperture cut down obliquely to the lower edge. It stands on three short feet. Nos. 27 and 27A are the upper and lower stones of a pot-quern, 12 inches in diameter, and 6 high. The meal aperture in the lower stone is a notch; the upper stone is $7\frac{1}{2}$ inches across, and has a single handle-hole. No. 28, the pot or lower stone of a quern, $5\frac{1}{2}$ inches high, and

9½ in diameter, is supported upon three feet; the stud-hole is thorough and the meal-hole opens on the side. It was found in the county of Fermanagh, and was—*Presented by Arthur Hafield, Esq.* Nos. 29 and 29A, the upper and lower stones of a small but very perfect pot quern, 9½ inches high, by 4 broad; supported by three feet; the meal-hole very small; two handle-holes in the upper stone, the one apparently formed when the other failed. Nos. 30 and 30A, a small pot quern, 9½ inches wide and 5½ high; the lower stone imperfect, the spud aperture thorough, and the meal-hole oblique. The top stone is 6½ inches across, and has two finger-holes upon it; the second apparently formed when the first was worn out. Nos. 31 and 31A, a very perfect specimen of the pot quern, much worn by use, stands on three supporters; has a very small meal-hole; the top stone is 6½ inches broad, and 1¼ thick, and has two handle-holes. No. 32 and 32A, a small pot quern without feet, much worn, as shown in the meal-hole, which has been cut out by constant friction. The top stone is probably not a part of the original machine; it has no grain-hole, but possesses an indentation for working upon the spud; the grain was very likely put in at the side. No. 33, the rude, much worn top stone of a pot quern, having three handle-holes formed apparently in succession as each became defective. No. 34, the lower stone of the smallest quern in the collection, being not quite 6 inches in diameter, and only 4 across the clear; it has no spud or grain-hole, but instead thereof is a raised nipple-like projection; the mark of the meal-hole remains. No. 35, on the ground-floor at the foot of the southern staircase, is the imperfect top stone of a large rude quern.—*Presented by Mr. R. Huchcock.*

MORTARS, like mill-stones, have passed down from very ancient to modern times, in fact, to the present day, of which examples, both of the earliest and of comparatively modern descriptions, may be seen in the Second Cross-case, Shelves II. and III., Nos. 27 to 30. See p. 146.

DRINKING-CUPS and drinking-horns, of various materials, some beautifully decorated, and of the most costly substances and workmanship, were in use in very early times in the British Isles, of which examples are afforded in the Dunvegan Cup

of the Mac Donalds of Skye,* and also in the Kavanagh Horn, preserved in the Museum of Trinity College, Dublin. Cups or goblets were placed beside most of the public or roadside wells of Ireland, even in Pagan times; and it is related that, in the reign of Conn of the Hundred Battles, and of his grandson, Cormac Mac Art, who flourished between the years 123 and 266 of the general Christian era,—so great was the wealth of this kingdom, and such the virtue of its people, as well as the administration of the ancient Brehon Laws, that silver cups were placed at each roadside well for travellers to drink with. Brian Boromhe, about the year 1000, revived this ancient custom, and put in force the law which sustained it; and it is to this golden age that Moore's lines of "Rich and rare were the gems she wore" refer.

This ancient custom, which still exists in the East, is alluded to in Cormac's Glossary, under the term *Ana*, the ancient name of this description of vessel, and a very old poem is there quoted in illustration of its having been in force at the Court of Knock-Raffan (one of the ancient palaces of the kings of Munster), in the county of Tipperary, in the reign of Fiacha Muilleathan, who reigned over that province in the third century. Very few stone drinking-cups have come down to this period; but we are fortunate enough to possess



Fig. 87. No. 3.

one beautiful specimen of a bowl-shape, formed out of a piece of impure potstone, and represented by the accompanying illustration



Fig. 88. No. 31.

Fig. 87. It is $4\frac{3}{8}$ inches across the bowl, $5\frac{1}{4}$ measured over the side which includes the handle, and is $1\frac{1}{4}$ deep in the cup (No. 3, Rail-case B). This great rarity was found in the Shannon excavations, and was—*Presented by the Shan-*

* It has been shown by Mr. E. Curry, who examined the inscription upon this cup, when exhibited at the Dublin Exhibition, in 1853, that it was of Irish manufacture. See "Archæological Journal," vol. xii. p. 81.

non Commissioners. In the tributes paid to the Irish kings, and which are described at length in the *Leabhar na g-Ceart*, or Book of Rights, drinking-horns are enumerated; and the Annals of the Four Masters state, that, in the reign of Tighernach, long before the Christian era, “goblets and brooches were first covered with gold and silver in Ireland:” these vessels refer, however, to the Metal period, and are to be taken into consideration in the description of objects formed of that material.

In addition to the foregoing, the Academy possesses a few other stone implements connected with the preparation or use of food,—for instance, the stone bowls (Nos. 29, 30, and also 31, Fig. 88), in the second Cross-case, and likewise the small limestone salt-cellar, No. 4, in Rail-case B.*

SPECIES IV.—ARTICLES OF HOUSEHOLD ECONOMY, FURNITURE, ETC.

WITH the exception of the grain-rubbers, querns, cups, and other articles employed in the preparation or use of food, described in the foregoing section, stone articles connected with household economy never could have been very numerous, even among the most primitive people. There are, therefore, but few articles in the Collection that come under this head. Upon Tray 00 have been arranged seventy flat, circular discs, perforated in the centre, chiefly of sandstone, and from $2\frac{1}{2}$ to $1\frac{1}{2}$ inches in diameter. Some approach the bead-like form in thickness, and others are not more than $\frac{1}{8}$ th of an inch thick. A few, to all appearance more modern than the rest, have been tooled with some sharp metal instrument, or flat point. They have been usually found wherever traces of

* Mr. Wakeman says, in his “Hand-Book of Irish Antiquities,” p. 161—“Stone cups appear not to have been uncommon among the Irish. An ancient stone vessel of a triangular form remains, or very lately remained, by the side of a holy well in Columbkil’s Glen, in the county of Clare, and another was found in the county of Meath, near the ruins of Ardmulchan Church.”

household articles, or those connected with dress and personal decoration, have been discovered, as in crannoges, street-cuttings, &c.; but a few have been found in connexion with sepulchral remains. They are usually denominated whorls, and are generally believed to have been used as weights attached to the end of the distaff; and many, composed of bone as well as stone, have been discovered in all localities throughout the country. The accompanying illustrations, drawn from



Fig. 89. No. 40. Fig. 90. No. 50.

Nos. 49 and 50, afford us a clear idea of the shape and decoration of these objects. Some of these are nicked round the central aperture, as if for holding threads. These little discs are popularly called "fairy mill-stones." Articles of this description may, with all other perforated objects which might gratify the eye of a rude people, have been strung on a necklace, yet such does not appear to have been their original use.

SHELF I., Tray OO, contains seventy flat circular discs, perforated in the centre, and numbered from 1 to 70. They are believed to have been distaff whorls, and are of various descriptions of stone; but most of the rude ones are of sandstone. In size they vary from $1\frac{1}{8}$ inches to $2\frac{1}{2}$ in diameter, and from $\frac{1}{8}$ th to $\frac{3}{4}$ ths of an inch in thickness. The series commences with the rudest and simplest forms, having an angular edge, and without any trace of ornamentation on the surface. From Nos. 39 to 46, a slight form of decoration may be observed in the concentric circles, which are shown particularly on those of the sixth row. The next form of decoration consists in a number of dotted points. A third form, sometimes decorated, but in other examples plain, is that in which the edge is rounded, as shown by Nos. 3, 16, 27, and 50, &c. Among these specimens, that numbered 49—*Presented by J. Huband Smith, Esq.*—and showing upon its surface a number of eccentric lines radiating from the aperture, is the most remarkable. At the bottom of this Tray, Nos. 66 and 67, are two very remarkable whorls of the plummet shape, the for-

mer of which is adorned with a number of concentric rings, and the latter has the aperture notched all round at the under surface, as if to fix, with greater security, the wooden spindle which was inserted into it.

Of the same character as those in the foregoing series, but more elegantly decorated, and apparently more recently made, may be seen in Class IV. a number of similar objects of bone, most of which have been found in crannoges.

The Academy does not possess any record of the localities, or the circumstances under which the majority of these articles were discovered. Many belonged to the Collection of Dean Dawson, in the Catalogue of which they are denominated "amulets." No. 5 was found "at the bottom of a heap of stones, called a Danish fire-place, or lime-kiln," in the townland of Muckruss, in the county of Fermanagh, and was—*Presented by Folliott Barton, Esq.* Nos. 8, 24, and 26, were found in large tumuli near Portaferry, in the county of Down, and were—*Presented by A. W. Nugent, Esq.* See Mr. Wilde's communication in the Proceedings, vol. iii. p. 260. Nos. 19 and 23 were found in the wall of the church of Ballinderry, county of Antrim. Nos. 20 and 36 came from Downpatrick; No. 22 was received from Kells Abbey, county of Kilkenney; and No. 32 from the county of Wicklow. No. 35 was taken out of a rath at Ennismag, county of Kilkenney; No. 38 came from Youghal. No. 46 was found in a rath at Lisnafunshin, barony of Fassadinin, county of Kilkenney; and No. 67 came from the county of Antrim.

Lithologically examined, these stone specimens afford the following varieties:—No. 1 is chistolite slate, such as may be seen at Killiney and Lugduff, &c. Nos. 2 and 7 are arenaceous clay-slate. Nos. 18, 32, 33, 35, 50, 61, 67, and 68, are clay-slates of different varieties. Nos. 3, 6, and 49, are mica slate. No. 16 is fine-grained grit. Nos. 28 and 65 are rottenstone slate. Nos. 41, 42, 46, and 58, are shale. Nos. 44 and 45 are siliceous slate. No. 48 is a limestone concretion. No. 51 is steatitic mica slate, approaching potstone. No. 60 is brown limestone. No. 66 is fine-grained soft limestone; and all the rest are sandstones of various descriptions.

STONE WEIGHTS were very common in shops, and at public cranes, and weighing-places, particularly in the western dis-

tricts of Ireland, until the late stringent enactments were passed concerning the standard weights of the kingdom; and up to a very recent period the ounce or steel-yard was in common use. No. 122, on Tray NN, may, as already stated, have been used as the weight for such an implement.

INKSTANDS of stone are not unusual, even at the present day. The Academy possesses six specimens of such, all of limestone, and arranged on the—

SECOND CROSS-CASE, SHELF I.—No. 1 is $8\frac{1}{2}$ inches long, $3\frac{1}{2}$ high, and $4\frac{1}{4}$ broad. There are three cup-like indentations at top, also a long cavity for pens; it is decorated on one side, and bears the date 1686, with the representations of birds between the figures. No. 2 is 8 inches long, 5 broad, and 4 high, with inkpans and a pen-case the same as the foregoing; it stands on four feet, and bears the inscription—"Anno Domini 1687 I. C." No. 3, the largest in the Collection, is supported by four feet, and is decorated upon one side and an end with triple concentric circles; it is $9\frac{1}{4}$ inches long, $6\frac{1}{4}$ high, and 5 broad; it has two inkpans, and bears the date 1729, very rudely figured. No. 4 resembles in shape the latter, but is only $6\frac{1}{2}$ inches long, 4 high, and 4 broad; it has two inkpans and also cavities for wafers and pens; one of the inkpans is covered at the top, except a small aperture, by a piece of lead neatly inserted. It bears the date—MB 1742. No. 5, is a small circular inkstand, open at the bottom, which was probably filled with lead; it has four masks carved on it, and is 3 inches in diameter, $1\frac{3}{4}$ high, and has five apertures on the top. No. 6 is a square pedestal-shaped piece of light-blue limestone, neatly carved and hollowed at top, as if for holding ink; it is 4 inches high, and $3\frac{1}{2}$ broad.

Among the objects "ministering to house accommodation," may be classed those edifices, either military or judicial, of which there are models in the Collection. Upon the subject of the dwellings of the early Irish, some observations have already been made at pages 99 to 102,—illustrative of the earthen rath; the hive-roofed stone dwelling; the cell and the cashel; the cave, either subterranean, or in-

cluded in the rampart of the fort ; and the cloghaun, or primitive stone house, such as those scattered over the islands of the west, and in the Celtic city of Fahan, in Kerry. These are nearly all that now remain of stone habitations, except such as were used for religious purposes, or were inhabited by ecclesiastics ; but as we do not at present possess models of any, they do not require description.*

MILITARY ARCHITECTURE appears to have received a great deal of attention from the Pagan inhabitants of this country, and exhibits an amount of skill, both in structure and engineering, which is only to be equalled by the earliest Pelasgian monuments in Greece, which those in Ireland resemble in so many particulars that one is led, from similarity in structure, to suppose an identity of people. They consist of enclosures, generally circular, formed of massive dry walls from 6 to 16 feet thick, of cyclopean architecture, and entered through a narrow gateway with sloping sides. Some have several surrounding ramparts or outworks, and a few have the inner surface of the wall formed into flights of stairs, leading to terraces at top. The most remarkable, as well as the most extensive collection of monuments of this description in Europe is to be found in the Isles of Aran, on the west coast of Galway, in particular Dun-Ængus—without exception the greatest barbaric monument of its kind extant—Dun-Oghill, Duv-Caher, and Dun-Connor ; also the Grianan of Aileach, in the county of Donegal ; Culcashel, in Mayo, on the borders of Roscommon ; Fahan and likewise Staigue Fort, in the county of Kerry, of which latter, a very beautiful and accurate model made of the actual stone of which the fort is composed, stands in the centre of the first Compartment of this Gallery ; and of which the ac-

* To persons anxious to promote the antiquarian interests of the Academy, we cannot propose a more laudable object than the construction and presentation to the Museum of models of ancient structures, such as cromlechs, duns, &c ; if accurately made to a scale, they would be most acceptable.

companying illustration is a faithful representation. It was—*Presented to the Academy by James F. Bland, Esq., of Derryquin, whose father published a description of this ancient stronghold in the Academy's Transactions, vol. xiv. This model is 2 feet 5 inches from out to out, and 5½ inches high. The origi-*

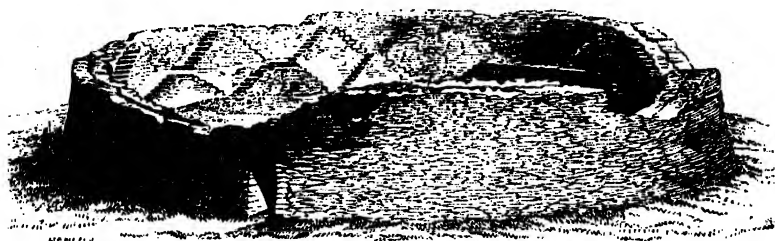


Fig. 91.

nal is an enclosure, nearly circular, 114 feet in diameter from out to out, and in the clear 88 feet from east to west, and 87 from north to south. The stones are put together without any description of mortar or cement; the wall is 13 feet thick at the bottom, and 5 feet 2 inches broad at top at the highest part, where some of the old coping-stones still remain, and which is there 17 feet 6 inches high upon the inside. It has one square doorway in the S.S.W. side, 5 feet 9 inches high, with sloping sides, 4 feet 2 inches wide at top, and 5 feet at bottom. In the substance of this massive wall, and opening inwards, are two small chambers; the one on the west side is 12 feet long, 4 feet 7 inches wide, and 6 feet 6 inches high; the northern chamber is 7 feet 4 inches long, 4 feet 9 inches wide, and 7 feet high. They formed a part of the original plan, and were not, like other apertures in some similar structures, filled-up gateways. Around the interior of the wall are arranged ten sets of stairs, as shown in the cut, the highest reaching very nearly to the full height of the wall, and the secondary flights being about half that much; each step is 2 feet wide; and the lower flights project within the circle of the higher. They lead to narrow platforms, from

8 to 43 feet in length, on which its wardens or defenders stood.

Although larger forts of this kind are known in Ireland, nothing so perfect in the construction of the staircases encircling the interior is to be found—with the exception of Dunmohr, in the middle island of Aran. A date of 2000 years cannot be considered too old for this monument, which is still in a state of great preservation, and only to be equalled by those in Aran, already alluded to, but which, although they exceed Staigue in magnitude, do not evince so much care in their design and construction. What may have been the original Irish name of “Staigue Fort”—which is quite a modern appellation,—has not yet been determined. It is not unreasonable to suppose that in and around a fortress such as this resided some tribe or people, who only knew the use of flint weapons and tools identical with those described in the foregoing section.

The remains of stone structures, generally on elevated positions, and bearing unmistakable evidences of the action of fire, are common in Scotland, and not altogether unknown in Ireland. Specimens from some of these Vitriified Forts will be found in the angles of the third Compartment, between Trays **EE** and **OO**, **CC** and **DD**, and **LL** and **FF**. See p. 147.

SPECIES V.—DRESS AND PERSONAL DECORATION.

STONE articles of personal decoration must have been comparatively rare during the early occupation of the British Isles, although in more modern times the gem and the precious stone have been eagerly sought after for such purposes. Stone beads are, however, of frequent occurrence in collections of Celtic Antiquities; but whether they preceded the flat whorl, and formed the intermediate link between it and the ring, which is likely, is but conjectural. Upon Tray **FF** is arranged a collection of these stone beads, of divers forms,

and varying in size from $\frac{1}{4}$ an inch to $3\frac{3}{4}$ inches. Strung together, they formed necklaces, which, in all probability, also contained, like those of other nations in a state of early simplicity, pendants of the teeth of animals, amulets, and glittering objects of various descriptions. Necklace beads of glass, bone, jet, and particularly amber, were in use among the primitive inhabitants of this country, and will be found in other portions of the Collection. The first object on Tray PP, is a star-shaped bead or button, perforated on the under side so as to admit a string, and here figured half the size :

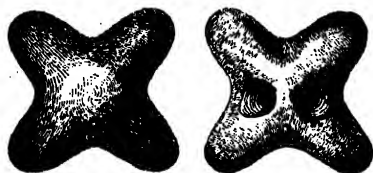


Fig. 92. No. 1.

both sides of this very beautiful ornament being shown. It might have been either strung on a necklace, or used as a fastener. It was found

in the sepulchral caverns discovered during the excavations made some years ago at the tumulus of Dowth, on the left bank of the river Boyne, in the county of Meath. No. 2, Fig. 93, figured one-fourth the natural size, is formed out of a piece of whitish flint of an impure description, but originally polished ; it has three apertures which meet in the centre for the attachment of a string.



Fig. 93. No. 2.



Fig. 94. No. 6.



Fig. 95. No. 10.



Fig. 96. No. 53.

In the second row, from No. 4 to No. 16, will be found thirteen beads derived from various localities, and selected from the collection generally, but here arranged in the form of a necklace. From No. 10, the centre-piece of that necklace, from the two articles placed at the top of this Tray, and from Nos. 6 and 53, have been drawn the accompanying illustrations, Figs. 92 to 96. Fig. 94, from No. 6, is an ordinary globular bead. No. 53, Fig. 96, is a flat, oval ring of clay-slate, figured one-fourth the natural size.

Rings of stone, numbered from 47 to 60, and varying in diameter from $\frac{7}{8}$ ths of an inch to $3\frac{1}{2}$ inches, and of which Fig. 96 affords an example of the small variety, may have been worn on the thumb or finger, or were attached by ligatures to the ear, or appended with other ornaments to necklaces.

Not only was stone formed into beads, and also finger and necklace rings, but it was also converted into such large rings as were probably used as bracelets or armlets, and of which

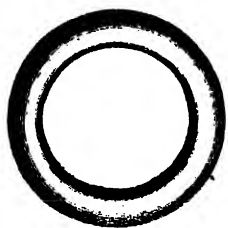


Fig. 97. No. 49.

there are several examples arranged upon Tray **PP**.

Of these, No. 49, Fig. 97, here figured one-third the natural size, is $2\frac{1}{4}$ inches in the clear, and

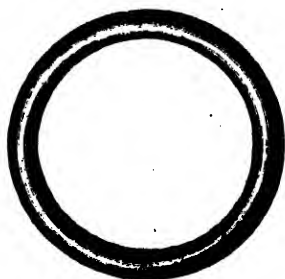


Fig. 98. No. 59.

No. 59, Fig. 98, the largest in the Collection, is $2\frac{3}{4}$ inches in the clear, and $\frac{1}{2}$ an inch thick. Similarly shaped objects in jet are frequent.

COMPARTMENT III.—SHELF I., *End-Case, Tray PP*, contains sixty objects of personal decoration. No. 1, a star-shaped bead or button, composed of iron sandstone; $2\frac{1}{8}$ inches across the points, smooth and convex on one surface, and perforated on the other, as shown in Fig. 92. No. 2, Fig. 93, a nodule of flint, with three apertures meeting in the centre; it is $1\frac{1}{2}$ inches in height, and somewhat more than $1\frac{3}{8}$ across. No. 3, a shield-shaped pendant, probably an amulet, of whitish limestone, $2\frac{1}{2}$ inches high, and $2\frac{1}{4}$ broad. Beneath these three objects are arranged, in necklace fashion, thirteen beads, the central one of which, composed of shale, No. 10, Fig. 95, is of a flat, oval shape, similar to those formed of jet; it is nearly 3 inches long, by $1\frac{3}{4}$ across the middle, and tapers to $\frac{2}{3}$ ths of an inch at each end; the aperture, which traverses the long direction, is of a large size. The beads on either side of this are either globular or resemble whorls; in size they vary, from No. 11, a round bead, $1\frac{1}{8}$ inches across, to No. 16, a flat, perforated disc, which is only $\frac{7}{8}$ ths of

an inch in diameter. Nos. 4, 6, 10, 15, and 16, are composed of shale; Nos. 5 and 7, of sandstone; Nos. 8 and 9 are limestone nodules; No. 12, chlorite schist; and Nos. 11, 13, and 14, limestone. No. 6 is given as Fig. 94.

On the first straight row are six beads, of the ring character, numbered from 17 to 22, varying from $1\frac{3}{8}$ inches to $\frac{7}{8}$ ths of an inch in diameter. No. 17 is shale; No. 18 is red slate; the remainder are of sandstone. The second cross-row contains five articles, of which No. 23 is a mica slate ring; No. 24, is a shale nodule; No. 25, a limestone amulet, $1\frac{1}{4}$ inches high, and about the same broad, perforated at top, with a cross figured upon it, as shown by Fig. 100, p. 127. No. 26, is a rotten-stone ring, indented at the side; No. 27, is a limestone ring. On the third row are five well-formed bead rings, of a medium size, of which Nos. 28, 29, and 30, are of shale; No. 31 is limestone; and No. 32, clay-slate. On the fourth row are arranged seven rings, all, with the exception of the first, of a small size. No. 33 is shale; No. 34, clay-slate, and only $\frac{3}{4}$ ths of an inch across. No. 35, the most beautiful specimen in the Collection, is a ring-like bead, of quartz, nearly transparent, and 1 inch in diameter, with a very small string-hole. Nos. 36, 37, and 39, are of limestone; No. 38 is a curious bead of chlorite slate, smaller on one side than the other. Upon the fifth row are seven small beads, some of them flat discs. Nos. 40, 43, and 45, are of limestone; No. 41, clay-slate; No. 42, sandstone; No. 44, crystalline limestone; No. 46, of limestone, is the smallest specimen in the Collection. The sixth row consists of five rings, four of them small necklace or bead rings; and the fifth, No. 49, Fig. 97, is a very remarkable bracelet, formed out of shale; its diameter within the circle is $2\frac{1}{4}$ inches, and from out to out $3\frac{1}{4}$; it is flat on the inner face of the ring, is nearly $\frac{3}{4}$ ths of an inch thick, and polished all over; No. 47 is shale; No. 48, granite; Nos. 50 and 51, sandstone. The seventh row contains six stone rings, varying in size from $1\frac{1}{2}$ inches to little more than 1 inch, and are more slender than the rest. No. 52 is a light ring of clay-slate; No. 53, Fig. 96, is clay-slate, $1\frac{1}{4}$ inches in the clear of the bore; No. 54 is also of clay-slate; No. 55, limestone; No. 56 is a limestone ring, 1 inch in the clear; and No. 57 is a clay-slate ring.

Nos. 58, 59, and 60, are portions of bracelets or anklets. No. 58 is half of a ring, 2 inches in the clear, and 1 inch broad, of earthy

limestone; it was procured from Ardakillan, and was—*Presented by the Board of Works*. No. 59, the largest ring in the Collection (see Fig. 98, p. 123), is $3\frac{1}{2}$ inches in diameter, $2\frac{1}{4}$ in the clear, and about $\frac{1}{2}$ an inch thick; it is composed of shale, and was procured from Cruttenclough, parish of Castlecomer, county of Kilkenny. No. 60 is the fragment of a large thin ring, $3\frac{1}{2}$ inches in diameter, and $3\frac{1}{8}$ in the clear. It was found at Keelogue Ford, and was—*Presented by the Shannon Commissioners*.

No. 15 came from Ballinderry Church, county of Antrim; No. 16 from Kells Abbey, county of Kilkenny; No. 48 was found in a cromlech at Ladysbridge, county of Down; No. 50, at Dungsantown, county of Wicklow; and No. 55 was procured from Aughagallon, county of Antrim.

At the bottom of this Tray will be found a series of Touchstones, numbered from 74 to 82. They belong to the class of Tools, although there can be little doubt of their having been worn either as pendants on a necklace, or attached by a string to the person. See pp. 89 and 90.

SPECIES VI.—AMUSEMENTS.

At the end of Rail-case B, numbered from 1 to 14, may be seen fourteen pieces of fine-grained honestone or sandstone, carved and decorated with punch-marks, rings, and circles, not unlike dominoes; but of a variety of figures, mostly, however, either oblong, angular, or circular. One of the most remarkable is that resembling the gable of a house, as represented by the accompanying cut, Fig. 99, from No. 2, and which is 3 inches in its greatest length, and 2 broad. They were found in the mud thrown up in excavating the Brosna, during the recent drainage operations connected with that river. These small stones, together with several similarly shaped pieces of bone, also found in the same locality, appear to have been used in some description of game.



Fig. 99. No. 2.

Of Species VII. and VIII.,—articles illustrative of music or the means of barter,—there are no stone representatives in the Academy's Collection.

SPECIES IX.—MEDICINE.

UNDER this head may be classed all those objects either used directly for medical or surgical purposes, such as instruments and medicine stamps, or indirectly, as prophylactics, in the shape of amulets and bullæ, &c., against the supposed influence of fairies, or the "evil eye," or disease in man or the lower animals,—a custom still in use over a large portion of the inhabited globe. The latter variety of these objects occupies a middle rank between medicine and religion.*

MEDICINE STAMPS, of Roman origin, have recently attracted the attention of the learned both in Great Britain and on the Continent, where several have of late years been brought to light. They are small stone tablets, engraved with letters, and were used either for impressing wax or marking some substitute for paper. They are generally oculists' stamps. One of these was found at Golden Bridge, county of Tipperary, on a plot of ground called the Spittle Fields, containing some ruins traditionally known as "The Hospital," and is now in the possession of Dr. Dowsley, of Clonmel, who has kindly placed a model of it in the Museum (see Rail-case C, No. 28). The inscription on it has been thus deciphered by Mr. Albert Way:—"MARCI JUVENTII TUTIANI DIAMYSUS AD VETERES CICATRICES. A little mark at the close of the first line, resembling a minuscule c, is somewhat indistinct." This is one of the few relics of Roman art (except some coins) which have as yet been discovered in Ireland.†

* The lucky horse-shoe fastened on the threshold or the door-post, and "the seven blessed irons" formerly hung round children's necks, are familiar examples of such objects in Ireland; while the coral hand with the pointed fingers, so much worn by all classes in southern Europe, is too well known to require description.

† "The Archaeological Journal," vol. vii. p. 854: see also Gough's Treatise in "The Archaeologia," vol. ix. p. 327; Dr. Sichel's Paper, published in Paris in 1845; and that of Professor Simpson, in the Edinburgh "Monthly Medical Journal," &c.

AMULETS.—Not unlike the modern amulet, usually denominated a ‘gospel,’ is the accompanying illustration, drawn the natural size from No. 25, on Tray PP, which bears upon its surface the rude representation of a cross, bearing a “remonstrance.” It is $1\frac{1}{4}$ inches high, and something more broad. It is of limestone, and appears to have been much worn. Somewhat of the same class is the shield-shaped stone, No. 3, in that series of ornaments.

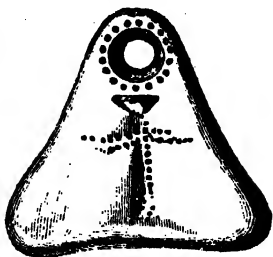


Fig. 100. No. 25.

CRYSTAL BALLS and ovals, varying from the size of a marble to that of a small orange, are to be found in many collections of antiquities in the British Isles. Such objects formed part of the decoration of ecclesiastical shrines, of which several may be seen in the Museum; for example, in the Cross of Cong, the Cathach of the O'Donnells, and the Domnach Airgid; and globes of rock-crystal are set in most sceptres, as may be seen among those in the regalia of Scotland, preserved in Edinburgh Castle. The smaller kind, and those not of a globular form, manifestly belonged to shrines, from which, perhaps, their peculiar sanative efficacy was supposed to be derived. Globular masses of rock-crystal, unconnected with either shrines or sceptres, have been preserved in Irish families for centuries past, and have always been regarded with peculiar veneration, not only for their great antiquity, but on account of the virtue assigned to them by the people, as amulets or charms, to be used in the prevention or cure of cattle distempers. One of the most celebrated of these crystal globes is that in the possession of the Marquis of Waterford, concerning which there is a tradition in the family that it was brought from the Holy Land by one of his Le Poer ancestors at the time of the Crusades. This is eagerly sought after, even in remote districts, in order to be placed in a running stream, through which the diseased

cattle are driven backwards and forwards, when a cure is said to be effected; or it is placed in the water given them to drink.* These crystal balls were also regarded as magic mirrors, such as those described by Spenser. We possess two of them in the Academy;—see Nos. 1 and 2, in Rail-case C. One is $2\frac{1}{4}$ inches in diameter, and the other $2\frac{1}{8}$. See p. 148.

SPECIES X.—RELIGION.

FROM the foregoing description of the weapons, some idea may be formed of the warfare, the hunting, and the fishing;—from that of the tools, of the industrial arts and probable mode of life;—from the notices of houses and forts, and the food implements and household furniture, we learn somewhat of the agriculture and the domestic habits;—and from the beads and rings, of the amount of personal decoration of the primeval people of this island. Of the objects used in their games or amusements a few specimens remain, but of their musical instruments no relics have come to light; and if they possessed money or a means of barter, we are ignorant as to what it was. That of which we have the most distinct evidence is the last office of man for his fellow—Sepulture. Of the precise nature of the religion of the people in this earliest period we possess no information, but such references as have been made to the pre-Christian religion show that it was a form of Druidism, in which its votaries chiefly worshipped the elements and heavenly bodies; and we know that when St. Patrick commenced his mission in the fifth century, his principal opponents were the Druid priests. If, therefore, we would know what the religion of the Pagan Irish was, we must learn it from the history of Druidism in other countries.

* For the foregoing account of the Le Poer crystal the writer is indebted to the Marchioness of Waterford. These amulets are described by Dalrymple, in his "Darker Superstitions of Scotland," p. 155, who gives an account of the most remarkable one north of the Tweed. See also Sir E. L. Bulwer's novel of "The Caxtons," vol. ii. p. 843, and Sir Walter Scott's novels of "The Talisman" and "My Aunt Margaret's Mirror."

Scattered over the plains of central and north-western Europe, extending as far as the rigours of the northern climate permitted the Celtic race to spread, and all over the British Isles, may be seen circular, oblong, square, and irregular-shaped enclosures, which have remained from the pre-historic period in their respective countries to the present time. Of these, Carnac in Brittany, Rutzlingen in Hanover, several in Denmark, Stonehenge and Aubry in England, the "Stones of Stennis" at Orkney, and Classerniss at Lewis, in Scotland, may be specified as examples; and some such exist in Ireland. Many of these are undoubtedly sepulchral enclosures, surrounding tumuli or uncovered cromlechs, and several mark the confines of what are termed "Giants' graves"—usually oblong enclosures, only a few of which have yet been examined further than the surface. One of the most notable stone circles in Ireland, from the size of the blocks which form it, and the extent of space which they enclose, is that surrounding the great mound at New Grange, on the banks of the Boyne, in the county of Meath. But besides these circles connected with sepulchral monuments, there are others apparently intended for a different purpose; and it is not without reason that many learned persons conjecture that these stone enclosures were subservient to religious uses, and that within them were enacted some of the mysteries of Druidism. Possibly they were also employed for holding solemn assemblies or courts of justice, and for the inauguration of chieftains.

These remarks have been elicited by finding in the Museum the model of a stone enclosure which exists in the deerpark of Hazlewood, townland of Magheraghanrush, parish of Calry, and county of Sligo—*Presented to the Academy by the President, Dr. Todd* (see *Proceedings*, vol. vi. p. 123), and of which the perspective view given on the next page affords a good representation. It is called *Leacht Con Mic Rush*, the stone of Con, the son of Rush, and also "The Giant's Grave." The large central space is 50 feet long, by

25 wide. The avenue between the two small enclosures is 22 feet long, and $3\frac{1}{2}$ feet wide, and each of the side spaces is 20 feet long, by 8 wide. The terminal space is an oval enclosure, 23 feet long, by $10\frac{1}{2}$ wide at the broadest part. Mr. Wynne, on whose property this interesting remain stands,

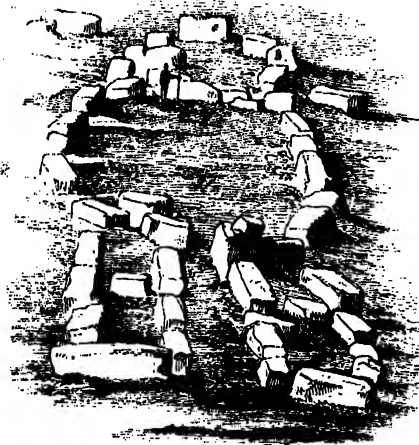


Fig. 101.

states that "several of the stones were, it is manifest, placed across the others, like those in Stonehenge, but the monument was much damaged some years ago, by persons seeking for treasure, supposed to be hid beneath the surface. The entrance to this enclosure faces the east. There is a second stone enclosure of the same character about half a

mile distant, but only a fourth of the size, although the stones of which it is composed are larger."* A glance at the Ordnance Map (sheet 15, Sligo) will show that this must once have been a very populous district, as many as thirty large raths still remaining within a circuit of about three miles round this structure; and not far distant, in the townland of Carrowmore, there still exist sixty circles and cromlechs, "the largest collection," says Dr. Petrie, "of monuments of this kind in the British islands, and probably, with the exception of Carnac, the most remarkable in the world." See Proceedings, vol. i. p. 140.

* The foregoing illustration is taken, not from the actual monument, but from the model, placed upon the ground-floor of the Museum. The Author is indebted to the Right Hon. John Wynne for much information respecting this very curious but hitherto neglected relic of Druidism.

In the arrangement observed in the Museum, and in the construction of this catalogue, the Ecclesiastical Antiquities—chiefly composed of metal—form an excepted class, not placed together according to material; but stone articles appertaining to religious usages are again excepted from that class.

ALTAR-STONES.—Upon the *Uladhs*, or penitential altars, and on those of the small missionary churches, particularly in the West of Ireland and the adjoining islands, or sometimes placed upon the pedestals of ancient stone crosses, or beside holy wells, there were usually found, some years ago, one or more oval stones, either natural water-washed pebbles, or artificially shaped, and very smooth; some were plain, and others decorated and engraved. “They were,” says Dr. Petrie, “held in the highest veneration by the peasantry as having belonged to the founders of the churches, and were used for a variety of superstitious purposes, as the curing of diseases, taking oaths upon them, &c.” (see *Proceedings*, vol. iv. p. 273). In the *Life of St. Deglan*, a MS. preserved in the Academy, we read, “that being on his way from Rome, he stopped in a certain church to say mass, and while there, a small black stone was sent from heaven through a window, and rested on the altar before him, and he gave it to Loonan, son of the King of Rome, who was with him; and the name it has in Ireland is *Dubh-Deglain*, from its black colour; and it still remains in Deglan’s church,”* at Ardmore, county of Waterford. Six such stones will be found in Rail-case C, numbered from 3 to 9, and of which the three illustrations on next page present the most remarkable forms.

No. 3, Fig. 102, of sandstone, is $4\frac{1}{2}$ inches long, and about $1\frac{1}{2}$ thick. On one side it has four indentations, like finger-marks, and upon the other the figure of a cross cut into

* Translation afforded by Eugene Curry, Esq., to whom the Author is much indebted for information respecting this and other matters connected with the MS. illustration of the articles in the Museum of the Academy.

the stone. No. 6, Fig. 103, a shale nodule, 4 inches long, has a peculiar form of cross marked on one side, and is plain

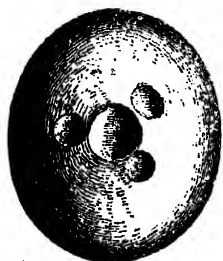


Fig. 102. No. 3.

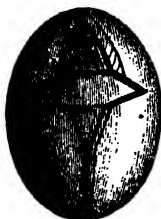


Fig. 103. No. 6.



Fig. 104. No. 7.

on the other. No. 7, Fig. 104, is also apparently a shale nodule; it is $2\frac{3}{4}$ inches in diameter, and in figure resembles a sling-stone, such as that on p. 75, Fig. 55. Upon the face shown in the cut may be seen a number of raised lines, forming an irregular, but by no means unornamental figure. On the obverse is a cross carved in relief, the arms of equal length, and extending to the edge of the stone. See details of these altar-stones on p. 148.*

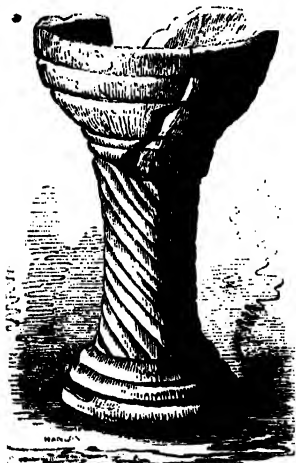


Fig. 105. No. 34.

and has a rope-like ornament carved upon the stem.

At the foot of the right-hand staircase, leading to the

* In some localities a number of white round stones are placed on the altars, concerning which there is a popular belief that they cannot be counted.

Southern Gallery, are a number of sculptured and inscribed stones, for the most part connected with either religion or sepulture. As examples of the former may be specified No. 18, the greater portion of a highly decorated cross; No. 19, a sculptured stone, bearing the figure of an ecclesiastic in relief; No. 20, a small flag-stone, marked with a cross; and No. 21, a small mitre-shaped stone, bearing the figure of an ecclesiastic. See page 142.

SPECIES XI.—SEPULTURE.

THE small square stone grave, or kistvaen, containing a single cinerary urn, placed beneath the surface of the soil, and so frequently exposed by the plough or the spade; the collection of urns, apparently marking the site of an ancient cemetery, possibly that of a battle-field; the grassy mound and the massive cromlech breaking the level outline of the landscape; the large stone circle, or the oblong enclosure, popularly termed a “giant’s grave;” the huge temple-like barrow, with its enveloping mound of stones or earth (the western type of the true Oriental pyramid); the simple, rude pillar-stone, the Ogham-inscribed monolith, or the sculptured cross; the wayside monument; the horizontal gravestone; the stone coffin; the modern vault, or stately mausoleum; and the carved recumbent figure in the decorated abbey, as well as the marble tablet in the modern church;—all afford abundant examples of the use of stone material in sepulchral and funereal rites, and evince the piety and reverence with which the dead were regarded in Ireland from the very earliest time. Examples of all such sepulchral monuments it would not be possible, except by models, to present in a Museum such as that of the Royal Irish Academy. But we have in the Stone Collection three forms of burial illustrated, viz., by the early stone urn of Pagan times; by the Ogham stones of very early Christian; and the fragments of

sculptured crosses of later Christian eras. Of the former we have a very rare and beautiful example in the large decorated stone urn upon the fourth shelf of the Second Cross-case, as shown by the accompanying representation (Fig. 106). It came into the possession of the Academy with the Dawson



Fig. 106. No. 35.

collection, but from whence obtained is unknown. Its dimensions are $8\frac{3}{4}$ inches high, about $10\frac{1}{2}$ broad, 1 inch thick, $7\frac{1}{2}$ wide in the mouth, and about $5\frac{1}{2}$ deep; it is composed of limestone, and decorated with two bands of those zig-zag lines characteristic of very early Irish

art, and has also on each side a circle, one raised, the other flat and grooved, supposed by some to represent the sun and moon. It has evidently been worked out with metal tools, and is probably of a much later date than the early fictile urns. Sir T. Molyneux described and figured a stone urn, said to have been found at the mound of Knowth, on the banks of the Boyne, county of Meath.

OGHAM STONES.—Under this heading has been classed a large collection of pillar-stones, marked with Ogham characters, (with two exceptions placed in the centre of the third Compartment) arranged on the ground-floor, at the foot of the staircase leading to the Northern Gallery. The cuts upon each side of the opposite page, Figs. 107 and 108, from No. 11, give views of one of the most interesting Ogham stones in the collection; it is about $4\frac{1}{2}$ feet high, and averages 11 inches across. It was found, with three other similarly inscribed stones, built into the walls of a dwelling-house in the county of Kerry, to which it is believed they had been removed from the souterrain of a neighbouring rath. There were originally two very rudely executed crosses on opposite

sides of it, but a portion, bearing the upper member of one cross and some Ogham strokes, has been broken off. The

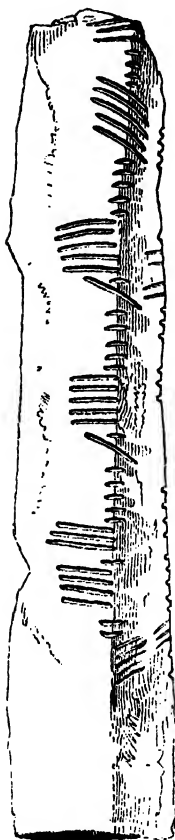


Fig. 107. No. 11.

lines are cut in for about one-eighth of an inch in depth, and run from an inch to $3\frac{1}{2}$ inches in length. Most of these Ogham lines appear to have been cut in by punching or rubbing with a metal tool. The Rev. Charles Graves, who has specially studied this form of writing, and made many communications on the subject to the Academy (see Proceedings, vols. iv. pp. 70, 173, 183, 254; vol. v. p. 234, 401; and vol. vi. pp. 71, 209, and 248), has thus deciphered the inscription upon this stone:—

“Fig. 107, NOCATI MAQI MAQI
RET[TI], i. e. [The stone] of
Nocat, the son of Mac Reithe.
Fig. 108, MAQI MUCOI UDDAMI,
i. e. [The stone] of Uddam, son

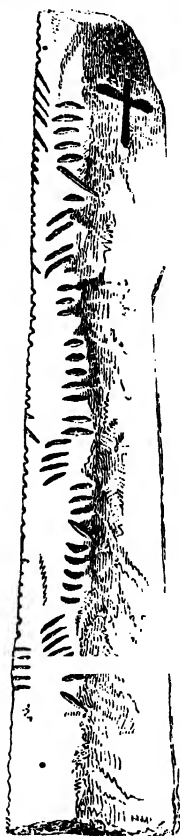


Fig. 108. No. 11.

of Mogh. The names Mac Retti and Mac Mucoi appear on several Ogham monuments in the county of Kerry; the former is supposed to be the same as Mac Reithi, which occurs in an ancient southern pedigree in the Book of Lecan. It is to be observed that Ogham inscriptions, like the most ancient monumental inscriptions in Wales and Cornwall, very generally present proper names in the genitive case. The crosses on this monument appear to have been executed by a hammer or punch, and not by a cutting tool,—a style of workmanship characteristic of the earliest inscribed stones in this country.”

No. 1, in the centre of the third Compartment of the Northern Gallery, is an Ogham stone, shown below, Fig. 109, presented to the Academy by the late Richard Hitchcock, Esq., a gentleman who devoted himself with much zeal and success to the search after monuments of this kind. It formerly stood in the churchyard of Aglish, in the parish of Minard, county of Kerry; but was removed by Mr. Hitchcock, who apprehended that if suffered to remain there, it might be destroyed, being frequently moved from place to place in the churchyard. The cross within a circle, of which this stone presents an instance, is found on other Ogham monuments, and certainly belongs to a very early period. Crosses of the same form are found

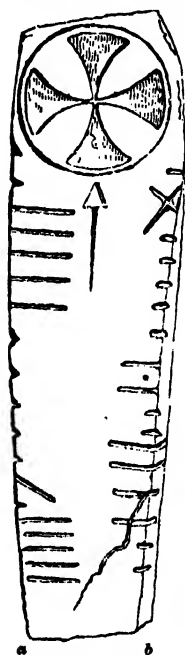


Fig. 109. No. 1.

amongst the illuminations of the Book of Kells. Dr. Graves reads the inscriptions as follows :—(a) MAQI MAQI (b) APILOGDO. Here, as in almost every Ogham inscription, we meet the word MAQI = MAICC = FILII. The proper names have not been with certainty identified.

The same eminent authority has furnished us with the following account of Ogham writing :—

“ Whether the ancient Irish, before the Christian era, possessed a primitive alphabet, differing essentially from that in use in other parts of Europe, is a question which has been debated by scholars with great earnestness. Those who maintain the affirmative appeal to the concurrent authority of the most ancient Irish manuscript histories, according to which an alphabet, called Ogham, was invented by the Scythian progenitors of the Gaelic race, and was introduced into Ireland by the Tuatha De Danaan, about thirteen centuries before the birth of Christ. They also refer to the oldest Irish romances, which

contain frequent allusions to the use of Ogham, either for the purpose of conveying intelligence, or in sepulchral inscriptions on pillar-stones erected in honour of distinguished persons. Finally, they point to existing monuments of this very kind, presenting inscriptions in the Ogham character; and argue from their rudeness, and other circumstances, that they must be ascribed to a remote and Pagan period.

“Those, on the other hand, who dissent from this hypothesis, allege that the legendary accounts of the invention of the Ogham bear all the marks of fiction; and they contend that the nature of this alphabet, in which the vowels and consonants are separated, furnishes internal evidence of its having been contrived by persons possessing some grammatical knowledge, and acquainted with alphabets of the ordinary kind. As regards the testimony of romantic tales, they impugn its authority by questioning the antiquity of these compositions, which, at most, prove the belief prevailing at the time when they were written as to the use of letters in a much earlier age. Lastly, they assert that a considerable number of the existing Ogham monuments are proved by the emblems and inscriptions which they bear to belong to Christian times. A decisive instance has been noticed in the case of a monument standing in the churchyard of Minard, near Dingle, in the county of Kerry. This stone, inscribed with crosses, and bearing the name *MARIANI*, must have been erected long after the introduction of the Christian religion and the Latin language into Ireland. This controversy cannot be brought to a satisfactory termination until the manuscript authorities bearing upon the subject have been discussed, and the inscriptions on the monuments carefully deciphered.”

To aid the visitor in examining the specimens of Ogham preserved in the Museum, we subjoin a brief explanation, by Dr. Graves, of this curious mode of writing:—

“The Ogham alphabet consists of lines, or groups of lines, variously arranged with reference to a single stem-line, or to an edge of the substance on which they are traced. The spectator, looking at an upright Ogham monument, will in general observe groups of incised strokes of *four* different kinds:—(1) groups of lines to the left;

(2) others to the right of the edge; (3) other longer strokes crossing it obliquely; and (4) small notches upon the edge itself. The characters comprised in class (1) stand respectively for the letters B, L, F, S, N, according as they number 1, 2, 3, 4, or 5 strokes; those in (2) for H, D, T, C, Q, or CU; those in (3) for M, G, NG, ST, or Z, R; and those in (4) for the vowels, A, O, U, E, I. Besides these twenty characters, there are five others occurring less frequently, and used to denote diphthongs and the letters P, X, and Y. In some instances the Ogham strokes are cut upon a face of the stone, instead of being arranged along an edge. In such cases an incised stem-line, or an imaginary line passing through the shortest, or vowel strokes, takes the place of the edge.

"Ogham inscriptions, in general, begin from the bottom, and are read upwards, from left to right. Almost all those which have been deciphered present merely a proper name with its patronymic, both in the genitive case. The monuments appear, for the most part, to have been sepulchral in the first instance. But there is reason to suppose that they were used to indicate the proprietorship of land, either standing as boundary stones, or buried in crypts, as evidences to be referred to in case of disputes arising.

"By far the greater number of the Ogham inscriptions discovered in Ireland have been found in the counties of Kerry and Cork. A few have been noticed in Wales and Scotland, and one in Shetland. Though several of the proper names occurring in the Irish Ogham monuments are to be met with in our annals and pedigrees, we doubt whether any of them have been yet so positively identified as to fix the time of the individuals whose memory it was intended thus to preserve."

OGHAM STONES.—Nos. 1 and 2 stand in the centre of the third compartment of the Northern Gallery; the former, Fig. 109, is 3 feet high, 10 inches broad, and $2\frac{1}{4}$ thick, and inscribed on both front edges; besides the Ogham inscription, it is decorated at top with a cross within a circle, beneath which is an arrow. It was procured from the churchyard of Aglish, barony of Corkaguiny, in the county of Kerry, and was, with Nos. 5, 6, 7, and 8—*Presented by Mr. Richard Hitchcock* (see Proceedings, vol. iv. p. 271; vol. v. p. 401). No. 2, on which the former stands, is a fragment, 22 inches long, $5\frac{1}{2}$ thick, and 9 broad, containing an Ogham inscription along

three of its edges. It was—*Presented by F. M. Jennings, Esq.* (see *Proceedings*, vol. iii. p. 231).

The remaining stones of this class, amounting to ten in number, will be found at the foot of the staircase leading to the Northern Gallery. No. 3 is a cubical stone, about 10 inches in the longest diameter, having one side evidently smoothed artificially, and inscribed with lines, believed to be Runic characters; it is said to have been found under a cromlech. No. 4, attached to the horizontal iron bar, where all the other stones of this class are arranged, is a small flat Ogham-inscribed stone, 2 feet 8 inches long, and averaging 9 inches broad; it is only marked upon the right-hand edge. No. 5 is 3 feet 9 inches high, 9 inches broad, and 2 thick; it is inscribed with Ogham characters on the upper portion of the front, and on both side-edges; upon the lower portion of the reverse side is a small square cross, cut in. This stone was found in a bog at Ballineanig, county of Kerry, about seven feet beneath the surface (see *Proceedings*, vol. iv. p. 272). No. 6, one of the most perfect stones of this description in the Collection, is 4 feet 5 inches in height, averages 1 foot in width, and about 4 inches in thickness. It has an Ogham inscription upon both side-edges, the strokes being sharper and more defined than on any of the foregoing specimens. They also appear to have been cut with a punch or chisel. On both the front and back we find an indented square cross; it formed the lintel over the doorway of a small circular building, within the circle of a rath at Gortnagullanagh, county of Kerry. The proper name decipherable from these Ogham strokes is "DECEDDA," and also that of "CATUFI," or Cathubius, perhaps the abbot whose death is recorded in the *Annals of the Four Masters*, under A.D. 554 (see *Proceedings*, vol. v. p. 403). No. 7 is 4 feet 2 inches high, and tapers to the top. It averages 9 inches broad, and 7 thick, and has an Ogham inscription on the left-hand edge, extending over the left side. It formed a portion of a fire-place in an old house at Martramane, county of Kerry (see *Proceedings*, vol. iv. p. 272). No. 8 is 4 feet 8½ inches high, averages 1 foot broad, and is 4 inches thick. It bears an Ogham inscription on the right-hand side, which (as deciphered by Dr. Graves) commences with the word "CURCI," the genitive case of the proper name

"Corc." It also bears a name beginning with "Mucor," which appears on a great number of these monuments, and which he takes to be the name of a tribe (see Proceedings, vol. v. p. 402). No. 9 is 4 feet 6 inches high, averages 11 inches broad, and is about $5\frac{1}{2}$ thick; it has a deeply-cut Ogham inscription, with very broad strokes on the right-hand edge, extending over the face, and passing round the edge on which it stands. This stone was, with Nos. 10, 11, and 12—*Presented by Mac Gillicuddy of the Reeks* (see Proceedings, vol. vi. p. 71). No. 10 is 5 feet 5 inches high, 11 inches wide, and 6 thick; an Ogham inscription extends over the right-hand side and face. No. 11, Figs. 107 and 108, is 4 feet 9 inches high, nearly square, but tapering to the top. This monolith has evidently been a pillar-stone, and is deeply cut with Ogham strokes on three of its angles and two of its faces. A rude cross is indented on the top face. See page 135. No. 12, placed horizontally along the first line of stones, is 4 feet 2 inches in length, $10\frac{1}{2}$ inches at the widest part, and bears an Ogham inscription on the upper edge, which is remarkable for traversing a natural groove of the stone; thus showing that the people who carved these Ogham strokes did not, in all probability, possess the means of squaring the stone.

All these Ogham inscribed monuments are either grit or sandstone. In addition to the foregoing references, see also the "Transactions of the Kilkenny Archæological Society," vol. ii. p. 283.

Nos. 13, 14, and 15, three grotesque female figures, of a class frequently found built into the walls of some of our oldest churches, may also be seen behind the Ogham stones in this locality. A few have been found in old castles; and all are of great antiquity.

No. 13 is a rudely carved female figure, of sandstone, 15 inches high, and 9 across the shoulders. No. 14 is a similar description of monument, and, like the foregoing, carved in relief. It was procured from the old graveyard of Lavey, county of Cavan, and—*Presented by Charles Halpin, M. D.* No. 15 is another stone, more massive than either of the foregoing, and having a small female figure carved upon it, but not raised above the level of the block of stone. It was found in the walls of a church in the county

of Cavan. The reader is referred to Mr. Clibborn's account of these ancient sculptures in the *Proceedings*, vol. ii. p. 565.

Besides these curious relics, now preserved in the Academy, the following list will point out some others still *in situ*:—In the gable of the old church at Rochestown, county of Tipperary; in the side of the old church at Dowth, facing the Boyne, county of Meath; in the church of Kells; over the door of Ballynahinch Castle, near Cashel, county of Tipperary; in the south front of Moycarkey Castle; and in the wall of the tower of Kiltinan Castle, the figure in which holds a horseshoe in one hand, and a dagger in the other, also in the county of Tipperary; in the wall of the old church on White Island, Lough Erne; and in the tower of the church at Abbey-larah, county of Longford. No doubt many similar ones exist in other localities. Although occasionally found built into the walls of castles, they are evidently not coeval with such edifices, nor even with the date of some of the churches, but were in all probability removed thereto from some of the neighbouring and earlier buildings.

The remaining sculptured or inscribed stones are arranged at the foot of the opposite staircase leading to the Southern Gallery.

No. 16 is a small sculptured flag, 16 inches long, and 10 broad, having engraved upon it a recumbent figure, holding what appears to be a book, and with a sort of fringe hanging down from the body, which appears to be enveloped in a kilt. Beneath the figure a portion of this nearly effaced Irish inscription may be discerned:—

[OR. DO] muir[chertach, or eobach] m̄

A prayer for Muirchertach, [or Muiredhach] Mac

No. 17 is a rude flag tombstone, 3 feet long, about 2 broad, and 2½ inches thick, having the following Irish inscription:—

OR. DO BRAN A prayer for Bran

This tombstone, which is evidently very ancient, was—*Presented by Birch, Esq.* No. 18 is about three-fourths of an ancient sculptured and evidently very small cross, the arms enclosed within a circle. It is now 2 feet 1 inch high, and was probably about 18

inches across the arms originally; it is sculptured on both sides with zig-zag, bead, and rope ornaments. It was dug up some years ago in making a grave in the old churchyard of Donaughmore, near Navan, county of Meath, and was—*Presented by W. F. Wakeman, Esq.*

No. 19 is a sculptured tablet stone, originally square, bearing the figure of an ecclesiastic, apparently St. Patrick, holding a crozier in the right hand, and a lamb in the left. It was found in the Shannon, and is much water-worn; the figure is 2 feet 3 inches high. There is an illegible inscription on top. No. 20 is an ornamented flag-stone, 1 foot 10 inches high, and 9 inches wide, having a floral embellishment below, and an indented cross above. It was found in the village of Kilvickadownig, county of Kerry, and was—*Presented by Mr. R. Hitchcock.* No. 21, a small stone, of a mitre-shape, bearing in relief the figure of an ecclesiastic in his robes; it is 9½ inches high, and originally stood in St. Patrick's Cathedral, Dublin. No. 22 is a monumental stone, 2 feet 3 inches long, and 14 inches in height, bearing in the Irish character this inscription:—

OR. DO DUNCHAD PRESBYTER HIC.

A prayer for Dunchad the Presbyter, here.

It was procured from the wall of a churchyard near Brookborough, county of Fermanagh, and was—*Presented by the Rev. J. Callwell* (see Proceedings, vol. vi. p. 512).

No. 23 is a piece of the shaft of the market-cross of Navan, county of Meath—*Presented by W. F. Wakeman, Esq.* (see Proceedings for 15th of June, 1857). It is 23 inches high, and 8½ on each square, and stands on the Quern-stone, No. 35 (see p. 113). Sir William Betham read a Paper upon this relic in 1849, and says it served to commemorate certain members of the family of Nangle, and was erected about the middle of the sixteenth century by Martin Nangle, son to Patrick, Baron of Navan. Of the four faces, the first contains a shield bearing the arms of Nangle; the second, an English inscription; the third represents a lady in the costume of the time of Elizabeth, with a Latin inscription underneath; and the fourth face has carved upon it a head with wings, three globes or roundlets, and over all a naked human figure with the right hand held to the head, and the left extended, holding an hour-glass (see

Proceedings, vol. iv. p. 407). The remainder of this cross is, we understand, in the possession of some persons at Navan. Wayside and monumental crosses, it may be remarked, are very common in the county of Meath.

No. 24 is a piece of sculptured limestone, $14\frac{1}{2}$ inches long and 12 high, presenting on the front face the armorial bearings of the Cheevers family. It was procured from the ruined church of Cheeverstown, county of Meath, and, with No. 26, was—*Presented by J. Huband Smith, Esq.* (see Proceedings, vol. vi. p. 131). No. 25 is a piece of Caen stone, representing a curiously sculptured head. No. 26 is a triangular monumental stone, emblazoned with three harps, the Arms of Ireland, and bearing the following inscription:—"John Noel Josse, 6th Jan.; John Noel Josse, His Majesties Kettledrummer, died Nov. 11, 1678." It is 2 feet long, and 1 foot wide in the centre. It was found in St. Andrew's churchyard, Dublin. No. 27 is a corbel of steatite, 30 inches long, and $9\frac{1}{2}$ high, from the church of St. Columbkille, at Kilmacrenan, county of Donegal, bearing, beside the sculptured bracket, a lion rampant (see "Dublin Penny Journal," vol. i. p. 388). No. 28, "An ancient stone, on which is carved a rude bas-relief, supposed to be the representation of a dog killing a wolf, taken from the Castle of Ardnaglass, in the barony of Tireragh, and county of Sligo, and said to commemorate the destruction of the last wolf in Ireland. The current tradition in the place from whence it came was—that some years after it was supposed the race of wolves was extinct, the flocks in the county of Leitrim were attacked by a wild animal, which turned out to be a wolf—that thereupon the chieftains of Leitrim applied to O'Dowd, the chieftain of Tireragh, who possessed a celebrated wolf-dog, to come and hunt the wolf—that there ensued a chase, which forms the subject of an Irish legend, detailing the districts through which it was pursued, until it was killed in a pine-wood in Tireragh." The land on which the beast was killed is still called Carrow-na-Madhoo, "the dog's quarter." In commemoration of the event, O'Dowd had this stone carved, and placed in the wall of his baronial residence. It was—*Presented to the Academy by C. T. Webber, Esq.*, in 1841; and is figured and described in the Proceedings, vol. ii. pp. 65, 66. No. 29 is a grotesque head, 9 inches long in the face, like those figured on gurgoyles. It came from Cloghphillip Castle,

county of Cork (see Proceedings, vol. iv. p. 442). No. 30, a grotesque head, crowned, formerly in St. Patrick's Cathedral, Dublin.

FIRST CROSS-CASE, between the first and second Compartments of the Northern Gallery, contains, upon **SHELF I.**, Trays **GG** and **HH**, sixty-six of the Shannon celts, described on page 69.

SHELVES II. and III. contain eighty-one rude shale celts, likewise from the Shannon, described as above, and numbered from 391 to 471, and also nine other ill-formed or fragmentary celts and chisels, numbered from 472 to 480, referred to on page 69.

SHELF IV. contains seventeen moulds and dies, described and figured on pages 91 to 93.

STONE SHOT.—Upon the bottom Shelf are placed twenty-five globular stones; some are natural nodules, and others artificially-shaped stone-shot, described at page 36. They are either limestone, ironstone, or sandstone. No. 1 is a very perfect stone shot, 5 inches in diameter,—from Londonderry. No. 2 is $4\frac{1}{2}$ inches in diameter. No. 3, of limestone, is $4\frac{1}{4}$ inches in diameter. Nos. 4, 5, 6, and 7, average 3 inches in diameter, and came from the Lough Gur crannoge; the three first are limestone. No. 8, a very perfect specimen, $3\frac{1}{4}$ inches in diameter, is limestone. No. 9, of limestone, is $3\frac{1}{4}$ inches in diameter, but is not quite circular; it was found in the Lower Castle-yard, Dublin, and was—*Presented by Captain R. W. Williams*. Nos. 10, 11, and 12, are cubical masses of quartz rock, averaging $2\frac{1}{2}$ inches in diameter, and apparently in process of formation into balls. No. 13 is granite. No. 14, a half-shot, $3\frac{1}{4}$ inches across, of dark conglomerate. No. 15, a stone grape-shot, $1\frac{3}{4}$ inches in diameter, is formed of limestone; it was procured in the river at Galway, and—*Presented by the Board of Works*. No. 16 is $1\frac{1}{2}$ inches in diameter. No. 17, a stone nodule, $2\frac{1}{2}$ inches in diameter, was found at Castleknock, near Dublin. No. 18, an oval ironstone nodule, 6 inches in the long diameter, was found in the bed of the river Shannon, at Gross's Island, near Carrick-on-Shannon, and was—*Presented by the Shannon Commissioners*. Nos. 19 and 20 are sandstone nodules, the former is $5\frac{1}{4}$ inches, and the latter 4 inches in the long diameter. No. 21 is a limestone shot, not quite spherical, $3\frac{5}{8}$ inches in diameter. No. 22 is a remarkable globular piece of sandstone, 3 inches in the long diameter, and apparently turned in a lathe. Nos. 23 and

24 are dark shale nodules, each about $3\frac{1}{2}$ inches in the long diameter; the latter was found in the Shannon, at Athlone, and was—*Presented by the Shannon Commissioners.* No. 25 is an oval sandstone nodule, 3 inches in the longest diameter.

SECOND CROSS-CASE.—The articles upon SHELF I.—six stone ink-stands—have been already enumerated and described upon page 118, &c.

SHELF II.—No. 7 is a circular stone anvil, indented round the side like some of the punches, and appearing to be much worn and hollowed at top; it is of sandstone, $4\frac{3}{4}$ inches high, and $5\frac{1}{2}$ in diameter at the bottom; it came from Dunganstown, county of Wicklow. No. 8, of red sandstone, is a small stone of somewhat the same character as No. 7, grooved at the side, and indented at top and bottom; it stands $2\frac{1}{2}$ inches high, and is $3\frac{1}{4}$ in diameter. No. 9, of fine white sandstone, artificially shaped, somewhat like a hammer, but without a perforation; is $3\frac{3}{8}$ inches long, and $2\frac{3}{8}$ broad. It was “found on the lands of Moir, county of Down, and is there commonly called a sling-stone; several have been found in the neighbourhood.” No. 10, a large ring-stone, figured on page 95, of coarse, white sandstone, $4\frac{3}{4}$ inches wide, and $2\frac{3}{4}$ thick; the opening in the clear is about $\frac{1}{2}$ an inch, but splays to the width of $2\frac{1}{2}$ inches. No. 11, of white sandstone, is an implement similar to the last, but not so well formed, and undecorated; it is $4\frac{3}{8}$ inches long, and $2\frac{1}{8}$ thick; the bore is somewhat larger than the foregoing, and the splay not so wide. No. 12 is a small stone ring of reddish sandstone, and was probably, like the former, used as a net-weight. No. 13, a flat circular stone, notched at the edge, and perforated in the centre; it is $6\frac{1}{2}$ inches long, and composed of sandstone. No. 14 is a rude, flat net-weight of sandstone, $5\frac{1}{2}$ inches long, perforated in the centre. No. 15, a flat stone, 6 inches long, oval in shape, and partially indented on both sides, as if for perforation, being evidently intended as a net-weight; it is interesting, as showing upon the upper surface of the hollow the circular mark of the drill. No. 16 is the fragment of a net-weight. No. 17, a portion of a shale ring, probably a net-weight, $3\frac{1}{2}$ inches in diameter, and $\frac{1}{4}$ th thick. No. 18 is a portion of a camstone ring, 3 inches in diameter. The Nos. from 19 to 25, both inclusive, are circular discs, resembling those at the bottom of Tray *NTN*, but not

so well finished. No. 19 is 3 inches in diameter, and $1\frac{1}{2}$ thick; rough at the edges, but smooth at top and bottom; composed of coarse white sandstone. No. 20, a muller or flat disc, similar to the foregoing, rough at the edges, but smooth above and below, as if it had been used for trituration or polishing; it is $3\frac{3}{8}$ inches in diameter, and $\frac{5}{8}$ ths thick. No. 21, a circular sandstone disc, smooth on both sides and edges, $3\frac{1}{2}$ inches in diameter, and $\frac{3}{4}$ ths thick. No. 22, the largest and rudest of the set, of sandstone, 4 inches in diameter, and $\frac{5}{8}$ ths thick. Stones of this class are usually found in crannoges, and were probably used in food manufacture. Nos. 23, 24, and 25, are sandstones similarly shaped to the foregoing, but in a very rude state; the former 3 inches in diameter, and $\frac{3}{4}$ ths thick. No. 24 is much thinner, but $3\frac{1}{4}$ broad, and the last measures 4 inches in the longest diameter. No. 26 is a long piece of schist, 8 inches by 3, and at one end indented on both surfaces, evidently with the intention of perforation. No. 27 is a rude stone mortar, or grain-rubber, of the smallest description, 8 inches in length, and $4\frac{1}{2}$ in width. No. 28, a rude piece of sandstone, hollowed at top, so as to form a small mortar; it is one of the most primitive implements in the Collection, and is $4\frac{1}{2}$ inches in diameter. No. 29, a basalt mortar, very well formed, 5 inches across, and $2\frac{3}{8}$ high; it is hollowed on both sides, and partakes somewhat of the urn shape; it was found at Gorey, and was—*Presented by J. Huband Smith, Esq.* No. 30, a bowl-shaped mortar, of coarse white sandstone, very massive, $3\frac{1}{4}$ inches high, and $4\frac{3}{4}$ wide; the aperture is $3\frac{1}{4}$ in the open, and 1 inch deep. This curious relic was found in the mound of Dowth. No. 31 (see Fig. 88) apparently a water-worn stone of an oval shape, $3\frac{1}{2}$ inches in the long, and $3\frac{1}{4}$ in the short diameter; it is hollowed at top into a bowl or cup-shaped cavity, nearly an inch deep, and $2\frac{1}{4}$ inches in the long direction. It was found in a cromlech near The Naul, county of Dublin, and was, with No. 30—*Presented by W. Wynne, Esq.*

SHELF III.—No. 32 is a massive anvil-shaped stone, $5\frac{1}{2}$ inches high, and 7 wide, very smooth at top and bottom, composed of limestone; found at Portaferry, and—*Presented by A. R. Nugent, Esq.* See Proceedings, vol. ii. page 614. No. 33, a squarish piece of rotten sandstone, $11\frac{1}{2}$ inches by 9, and not quite 3 in thickness, hollowed on the upper surface into a dish-like shape; it was found on the lands of Paughanstown, near Ardee, county of Louth, in one

of a series of subterranean chambers, and was—*Presented by John T. Rowland, Esq.* See Proceedings, vol. iv., page 404, in which will be found an account of the *southern* in which this and several other interesting remains were discovered. No. 34 is a stone chalice, found at Humphrystown, barony of Talbotstown, county of Wicklow, and described at p. 132; see Fig. 105. No. 35 is the sepulchral urn, of limestone, described and figured at p. 134; the lower portion is decorated with circular lines; upon the upper may be seen two sets of zig-zag ornaments, interrupted upon each side by circles, one of which presents a protuberance, the other is hollowed into a ring. No. 36 is the fragment of a small vessel, of whitish limestone, in shape like a mug, with a projection below, probably part of the handle; it is about 5 inches high, and 4 wide; the hollow extends to about half the depth of the article in its present state. No. 37, the fragment of a rough limestone vessel, either a mortar or a drinking-cup, decorated on one side with a female head carved in relief; it is $3\frac{1}{4}$ inches high, and $3\frac{3}{4}$ broad. No. 38, a very peculiarly shaped piece of stone work, resembling in external figure an urn, but with handles proceeding from the bottom, and which probably met over the top, where there was a slight hollow in the body of the vessel. It is 8 inches across, and 4 in height; the arms, however, spread to about $13\frac{1}{2}$ inches. It is said to have been found by a farmer in a cairn at Dunadry, county of Antrim, see Proceedings, vol. v. p. 299; and was—*Presented by J. Huband Smith, Esq.* No. 39 is a flat piece of felspathic-ash porphyritic, vitrified upon the surface, and taken from a small tumulus on the western side of New Grange, in which was “discovered a vast collection of the remains of domestic animals, as well as several human bones, some perfect, and others in a half burned state. What gave particular interest to this excavation was the fact of the stones which lined the floor having been vitrified on the external face, which would lead to the conclusion that the cremation had taken place in the grave.” See Proceedings, vol. iii. p. 262. This stone was procured and—*Presented by W. R. Wilde, Esq.* No. 40 is a portion of vitrified stone, procured from a kist in the neighbourhood of New Grange, and—*Presented by J. Huband Smith, Esq.* No. 41, a limestone vessel, resembling a mortar, having the remains of a handle on one side, and a ridge on the other. It is $6\frac{1}{2}$ inches high, $7\frac{1}{2}$ wide, 5 deep in

the hollow, and $5\frac{1}{2}$ across the clear of the mouth. It may have been a stoup or holy-water pot. It was found in 1823, fourteen feet beneath the surface, in excavations made in Fishamble-street, near the foundations of Christ Church, city of Dublin.

The two lower shelves in this Case are occupied by the pot-querns described at pp. 108 and 112.

In the corner of the third Compartment may be seen some specimens of vitrified forts, the largest of which, No. 1, procured from that at Shantamon, in the county of Cavan, was—*Presented by Rev. P. Moore* (see Proceedings, vol. v. p. 69). Nos. 2, 3, and 4, are several specimens of vitrified stones, taken from forts. No. 5, upon the third shelf, was procured from the vitrified fort near Banagher, county of Derry, and was—*Presented by J. Huband Smith, Esq.*

RAIL-CASE A, opposite the second Compartment, contains the Flints alluded to at pages 29 and 30, from Nos. 1005 to 1275 (the latter was found in the urn No. 31); the specimens of obsidian from the coast of Mexico, showing the process of weapon-making from that material; three American arrow-heads from the neighbourhood of Lake Ontario: and twenty-four celts, numbered from 480 to 504 (see pages 69 and 70).

RAIL-CASE B contains eight celts, numbered from 505 to 512, described in the foregoing account of the weapon-tools; also the beautiful Jamaica celt alluded to at page 72, which is $5\frac{3}{4}$ inches long, and $3\frac{3}{4}$ broad; three punches and cutters, Nos. 35, 36, and 37, described at pages 86 and 87; five burnishers, Nos. 69, 70, 71, 72, and 73, described at page 89; the three latter are natural stones. No. 74 is a small, perforated sharpening-stone, described at page 30, and found in a tumulus. This case likewise contains twelve round or oval stones, of which Nos. 1, 3, and 5, are figured on page 75, where nine of them are described. Nos. 10, 11, and 12, are of the same class. No. 13 is the sink-stone described and figured on page 95.

Nos. 1 and 2 are stones believed to be ploughshares, and described at page 103. No. 3 is the stone cup described on page 114. No. 4, a salt-cellar of limestone, of an oval shape, 2 inches high, and $2\frac{3}{4}$ broad at the base.

Nos. 1 to 14 are fourteen small pieces of flat soft sandstone, deco-

rated, and probably used in some description of game; they are alluded to at page 125.

RAIL-CASE C contains the two crystal globes referred to at page 127. No. 1 is $2\frac{1}{2}$ inches in diameter, and is reputed to have belonged to the regalia of Scotland. No. 2 is $1\frac{1}{2}$ inches in diameter, and was found at Uppercourt, county of Kilkenny.

Altar-stones, described at page 130.—No. 3 is a flatted oval stone, $4\frac{1}{2}$ inches in the long, $3\frac{3}{4}$ in the short diameter, and $1\frac{1}{2}$ thick, figured, with Nos. 6 and 7, on page 131. On one side of it is sculptured a cross, and upon the other four indentations, as in the cut. It was dug up near the ruins of Trummery church, county of Antrim. No. 4 is a similar object,—a natural nodule, nearly circular, undecorated, round at the edge, 4 inches across, and 2 thick in the middle. No. 5, a sling-stone-shaped altar-stone, thick in the centre, and fining off to the edge, nearly circular, 3 inches in diameter, and $1\frac{1}{2}$ thick; it has a cross carved on the upper, but is plain on the under, side. It was found in the ruined church of St. Matthias, at Inishnee, off the coast of Connemara. No. 6 is an ovoid altar-stone (see Fig. 104), 4 inches in the long, 3 in the short diameter, and $1\frac{3}{4}$ thick; it is decorated on the upper side, first by a ring which encircles the edge, and then by a cross, as seen in the cut. No. 7 is highly decorated on the upper surface (see Fig. 105) with raised lines, forming a lozenge space in the centre; it is $2\frac{3}{4}$ inches in the longest direction, and $1\frac{1}{4}$ thick. This and No. 5 were—*Presented by T. F. Bergin, Esq.* No. 8, a polished stone nodule, shaped like a sling-stone, is 3 inches across, and $1\frac{3}{4}$ thick in the middle, fining towards the edge.

No. 9 is a very smooth water-worn pebble, of a circular shape, $3\frac{1}{2}$ inches in diameter, and $1\frac{3}{8}$ thick; it was found in the mound of Dowth, on the Boyne, and was, with Nos. 10 and 11—*Presented by William Wynne, Esq.* No. 10 is a small water-worn pebble, of conglomerate, oval in shape, and 2 inches long. No. 11 is a lime-stone pebble, egg-shaped, and $1\frac{1}{2}$ inches long.

No. 12 is a circular disc, of white limestone, shaped at the edge like the cover of a box; it is not quite 2 inches broad, and is about $\frac{1}{2}$ an inch thick. No. 13 is a circular sandstone disc, $1\frac{1}{2}$ inches broad, and about $\frac{1}{2}$ an inch thick; it looks like a half-formed whorl, but is not perforated; it, with No. 12, was—*Presented*

by the Shannon Commissioners. No. 14 (Fig. 110), a pipe-clay crucible, 2 inches broad, and 1 high, found in the crannoge at Dun-



shaughlin. No. 15, a globular mass of sandstone, worked with great care, having an indented ring all round, as if for attaching it to a line; it was probably used as a fishing-weight, and is $\frac{7}{8}$ ths of an inch in diameter. No. 16, an earthy, limestone concretion, broader and flatter than the foregoing, and indented for a string or line on the edge; it is $1\frac{1}{2}$ inches in diameter. No. 17, a natural limestone concretion, artificially carved, and about an inch in diameter. No. 18, ditto. Nos. 19 to 25, a collection of objects found in the large urn, No. 31, viz., No. 19, a small whetstone, $2\frac{1}{4}$ inches long, showing the remains of an aperture at top, and composed of sandstone. No. 20, a chisel-shaped whetstone, of slate, $2\frac{1}{4}$ inches long, and much worn; Nos. 21, 22, and 23, small fragments of stone, averaging $1\frac{1}{2}$ inches long; No. 24, a thin scale of copper, bent, and also showing the mark of a perforation at one extremity. No. 25, a small bone bodkin, $2\frac{1}{2}$ inches long, and perforated at one end. All these, as well as the flint, No. 1275, found along with them, seem to have been subjected to the action of fire. No. 26 is a piece of Jasper slate, with the letter J upon it. No. 27 is a cast of the medicine stamp described at page 126. No. 28 is a dark-coloured piece of shale and sandstone, 3 inches across, marked on the surface like the Game-stones, but also bearing the letters A and B. It was found in the Ballinderry crannoge, and—*Presented by Mr. Hayes, of Moate.*

At the end of the Stone Articles in this case may be seen a very beautiful hammer, of the battle-axe form, such as that represented by Fig. 66, p. 80, and which has been deposited in the Academy, together with several other antiquities—by *Sir Benjamin L. Chapman, Bart.* See Proceedings, vol. vi., for 15th June, 1857.

The second half of Rail-case C is occupied with the stone articles deposited in the Museum by the Royal Dublin Society.

The following is a list of the Scandinavian Antiquities of Flint and Stone to which reference has been so frequently made in the foregoing pages, and which are particularly described at page 8.

FLINT.—No. 1, a rough-hewn, yellow, chisel-edged celt, 11 inches long, and 3 broad,—*Flintkile eller øxe uden Bane*.

*No. 2, a small specimen of the same implement, 5 inches long, polished, particularly towards the edge, which is very sharp.

Nos. 3, 4, and 5, specimens of the same description of weapon-tool, averaging 5 inches in length,—*Flintøxer med Bane slebne paa de to Sider*.

Nos. 6, 7, and 8, specimens of the same,—*Flade Flintøxe slebne paa alle Sider*; thinner and sharper than the foregoing.

No. 9, the model of a chisel-edged celt, with an aperture at top,—*Afstøbning af en Saenkesteen gjennemboret foroven*.

No. 10, a rough-hewn gouge, or hollow chisel of flint, 5 inches long, with curved edge,—*En raa Hvulmeisel*.

No. 11, a smoothed and polished specimen of ditto, $6\frac{1}{2}$ inches long and 2 broad at the edge.

Nos. 12, 13, *14, and 15 are long narrow flint chisels, quadrangular in form, and brought to a remarkably sharp edge,—*En raa Smalmeisel*. No. 12 is in the rough-hewn state; it is 6 inches long, and $\frac{5}{8}$ ths of an inch broad. The three last are smoothed and polished, particularly No. 15, which is 8 inches in length, and so sharp at the edge that it might be used in working timber at the present day.

We do not possess anything like these long chisel-celts and gouges in the Academy's Collection. They lend confirmation to the opinion expressed by the author of this Catalogue, that celts were used more as tools than weapons.

Nos. 16 and 17, models of flint masses, similar to that described and figured on p. 8,—*Tvende afstøbninger af stykker hvoraf Flaekkerne er udhuggede*.

Nos. 18 to 23, six large flint-flakes,—*Flintspaaner*,—showing the first process in weapon-making; but much finer than anything found in Ireland. No. 23 is 5 inches long.

No. 24, a beautiful flint dagger,—*En Knif*,—tooled all over, 8 inches long, and $1\frac{1}{4}$ wide.

No. 25, ditto, with a quadrilateral handle, $7\frac{1}{2}$ inches long.

*No. 26, a similar weapon, still more perfect, and formed with the greatest accuracy in all its proportions; it is 9 inches long.

No. 27, another flint knife, or dagger, $8\frac{3}{4}$ th inches in length,

with a leaf-shaped blade, and the quadrilateral haft peculiarly tooled at the edges by a number of delicate indentations, which serve the double purpose of ornamentation and to increase the grip.

No. 28, a spear or lance-head, 5 inches long,—*Landsespidsse*.

Nos. 29, *30, 31, and 32, four half-moon-shaped flint knives,—*Halvmaaneformede Knive*,—tooled all over, and varying from the first, which is $4\frac{1}{2}$ inches long, to No. 31, which is $8\frac{1}{2}$ in length, and $1\frac{1}{2}$ broad in the middle. No. 32 is serrated on the edge.

No. 33, a cast of a harpoon-head,—*Harpunspids*; shaped like an indented arrow.

Nos. 34, 35, and 36 are three flint arrow-heads. The first—*En Pilspsids forfærdiget af en Spaan*—differs from any of those in our collection, in having a tang to affix it to the shaft. No. 35 also differs from those in the Academy's collection in being trilateral. The last is an ordinary heart-shaped arrow, of which so many fine specimens are in the Museum.

No. 37, a flint rasp, or saw,—*Fragment af en Rasp*,—imperfect, $6\frac{1}{2}$ inches long.

No. 38, the model of a saw, perfect at the top, and $6\frac{1}{2}$ inches in length.

No. 39, the model of a whetstone for polishing axes and gouges,—*Afstøbning af en Slibsteen til Huulmeisler*. It resembles in shape the femur of a large animal, and is 13 inches long.

No. 40, a stone-hammer, with a cutting-edge,—*To öxer me rund Bane og Skafthul*,—8 inches long, and having the handle-hole very near the back.

No. 41, ditto, but rougher and smaller, 5 inches long, and nearly 8 across the edge.

No. 42, a stone-hammer, with a prolonged back. In these four tools the apertures are cylindrical, and in this specimen in particular the hole bears the mark of a metal drill.

No. 43 is a small hammer, 4 inches long.

No. 44, a small hammer, $3\frac{1}{2}$ inches in length, with a prolonged back.

No. 45, a specimen of the same variety, but much more elegant in shape, 5 inches in length, with the back much prolonged.

No. 46, a pick-shaped hammer-axe,—*En Öxhammer med bred Bane*,— $7\frac{1}{2}$ inches long, the hole nearly in the centre.

No. 47, a hatchet-shaped stone hammer, $6\frac{1}{2}$ inches long.

No. 48, a boat-shaped stone hammer, $5\frac{1}{2}$ inches long, with an elevation round the lower edge of the aperture,—*En baadformet Steenhammer*.

No. 49, the model of another boat-shaped hammer, similar in character to the foregoing, and $7\frac{3}{4}$ inches in length.

No. 50, an axe-shaped hammer, 6 inches long.

No. 51, a hatchet-edged hammer-axe, $6\frac{1}{2}$ inches long.

No. 52, an axe-hammer, with a very broad edge, $8\frac{1}{2}$ inches long, and $4\frac{1}{2}$ broad in the blade.

No. 53 is the model of a decorated hammer-axe.

No. 54, a model of a very beautifully-formed hammer-axe, 7 inches long, with a knobbed back,—*Afstøbning af en pragtig Öxhammer med knapformed Bane*.

No. 55, the cast of a stone chisel, highly formed, and with a knob or hammer top, $6\frac{1}{2}$ inches long,—*En meisel med haandtag*.

No. 56, the cast of a stone-punch, or cutter, 5 inches long,—*Afstøbning af en öxe med afsats uden Skafthul*.

No. 57, the cast of a curved punch, or cutter, hammer-backed and grooved in the middle, as if for the application of a flexible handle.

Nos. 58 and 59, casts of shuttle-shaped stones, with two marks on their sides; the former is $3\frac{3}{4}$ inches long, the latter $2\frac{3}{4}$, and more like those in the Irish Collection (see page 75).

No. 60, the cast of a sink-stone grooved in the middle; $2\frac{3}{4}$ inches in the long diameter—styled in the Danish Catalogue, *Afstøbning af en Saenkesteen med Fure paa Midten*.

Those marked thus * belong to the Donation of 1816.

The bronze and iron articles in this collection will be enumerated under their respective heads.

CLASS II.—EARTHEN MATERIALS.

EASTERN GALLERY.—CASE I.



THE rudest states of society afford evidence of a knowledge of pottery, in connexion with the existence of the most primitive weapons and tools of flint, stone, or bone, whether among extinct races, or existing savage tribes; and wherever we trace the footprints of the Celtic people, there we are certain of discovering some remnant of this art. The chief and, perhaps, earliest use to which this knowledge was turned was the formation of urns for sepulchral purposes. Such relics alone of earthen materials, of the very earliest time, have remained to the present day; and as they usually contain fragments of incinerated human bones, or those of the lower animals, they open up a wide field for speculation upon the subject of the funereal rites of our Celtic ancestors, and lead us to believe that, at one period, the people of Ireland, in some instances at least, followed the Oriental custom of cremation, or burning the dead, and also of sacrificing to the manes of the departed. This latter idea is strengthened by the fact of our discovering among these human cinders fragments of the bones of some of the lower animals, birds and small mammals in particular. Whether the use of the wheel is coeval with the potter's art of the simplest description is undecided; there can be little doubt that it was used in the formation of some, although not all, of those cinerary urns; it is not, however, so clear that they were burned in a kiln or oven, so as partially to vitrify the material, some of them appearing to have been merely sun-baked. Some were, perhaps, con-

structed at the grave, and burned in the funeral pyre. Of the various forms of urns, their ornamentation, uses, and the circumstances under which they were discovered, we shall have to remark when describing them in detail; but, although they are undoubtedly the most ancient remains of articles formed of clay or earthen material, yet, following out the principle of arrangement adopted in the Museum and in this Catalogue, they come last in the category, according to the secondary division, or that by use;—Sepulture being the final species in the classification.

The history of the fictile art in Ireland, in ages subsequent to those of urn-burial, has not yet been written; nor, with the exception of that descriptive of glass and enamel, is there much to observe concerning it; for although our people may not have been wanting in ingenuity, dexterity, or aptitude for design, the materials for the finer sorts of porcelain do not occur in sufficient quantity to enable them to cope in this respect with other countries on the Continent or elsewhere. Moreover, unless preserved in tumuli, the remains of the pottery of early times must, from the fragility of the material, be rare in any country.

All the articles belonging to this class are arranged in the first Glass-case of the Eastern Gallery, and in the adjoining Rail-case D.

As there are no weapons of earthen material in the Museum, we pass over the first to the next three species, viz., Tools, Food Implements, and articles of Household Economy and domestic use, &c., the two latter of which may here be considered together.

CLASS I.—ORDER I.—CLAY.

SPECIES II.—TOOLS.

THE only porcelain articles of the Tool species in the Academy's Collection are the four small crucibles, Nos. 1, 2, 3, and 4, in Rail-case D. The former is circular in shape,

2½ inches broad, and 1½ high, and lined with a white enamel. It was found at Inis Clothrann, or the "Seven Churches Island," on the Shannon, in Lough Ree. No. 2 is a triangular crucible, of the ordinary shape, very thin, 2½ inches high, and 2 wide in the mouth; it is evidently much more modern than the foregoing. No. 3 is a still smaller and much-used specimen. No. 4 is a purse-shaped vessel of hard-burned pottery, 3 inches high. No. 9, on Shelf II., although apparently a food vessel, may have been used in smelting, see page 158.

SPECIES III. AND IV.—FOOD IMPLEMENTS, AND ARTICLES OF DOMESTIC ECONOMY.

VESSELS of pottery of sufficient antiquity to deserve a place in this collection are, for the reasons already stated, very rare. In the examination of crannoges, made in recent years, which have brought to light such a vast collection of antique articles of domestic economy or personal decoration, it is remarkable how few specimens of earthenware were found;—yet it is possible that many may have been destroyed.

Upon the top shelf of the case containing the earthen materials may be seen seven jars of glazed pottery, each capable of holding about a quart, and which are usually denominated "Graybeards," or "Bellarmine."

The accompanying illustration, Fig. 111, is drawn from No. 1, which stands 9 inches high, and is 5 in diameter at the widest part; it is of a mottled yellow-gray colour: upon the neck there is in relief the grotesque figure of a man's head, with a long beard, and below it a star-shaped device. It, together with Nos. 2 and 3, was—*Presented by Lord Farnham.* Upon the front of this, and all the



Fig. 111. No. 1.

other vessels of this shape, is a dark-gray coloured stripe. The handle upon this specimen has been cemented to the body by some remarkably hard substance.

No. 2, a graybeard, $8\frac{1}{2}$ inches high, with a coat of arms beneath the mask. No. 3, a similar vessel, of smaller size. No. 4, an earthenware pitcher, without the bottle-neck, but of antique shape; it is $8\frac{1}{2}$ inches high, and 5 in diameter; it was found in a deep well in the county of Cavan. No. 5, a graybeard, $9\frac{1}{2}$ inches high, with a star device beneath the mask, similar to No. 1; the gray stripe down the centre is very well marked. No. 6, a small graybeard, with a star device beneath the face. No. 7, a short graybeard, very much glazed, having as a device a coat of arms, with two griffins rampant reversed; it is 8 inches high, $5\frac{3}{4}$ broad, and was "found at a great depth in a bog at Ballinacurra, county of Sligo."

Although belonging to the second order of Class II., viz., Glass and Enamel,—bottles of the former material are here enumerated. Four of these have been selected from a much larger collection of decanter-shaped, dark-green vessels belonging to the Academy, and have been placed after the graybeards upon the first shelf of this case.

No. 1 is a wide-bottomed glass bottle, bearing upon a raised stamp the inscription, "J. Swift, Dean, 1727," commemorative of the time of Swift's greatest popularity. It is $8\frac{1}{2}$ inches high, and 6 across the widest part. Many bottles of the same period bear the Dean's name. No. 2 is a short, antique-shaped bottle, of a lighter-coloured glass than the former, 7 inches high, and $4\frac{3}{8}$ across the globular part. It was found in sinking the bed of the Woodford River, at Drummeltagh Shoal, county of Fermanagh, four feet beneath the bed of the river. It, with No. 4, was—*Presented by the Board of Works*. No. 3, a similarly shaped bottle, but longer in the neck, $8\frac{1}{2}$ inches high, and $3\frac{1}{4}$ wide. No. 4, a small bottle, similar to No. 2, of light green glass, stands 7 inches high, and is $5\frac{1}{2}$ wide. Upon a raised circle on the side may be seen the letters K. T. B. It was found in a gravel-bank at Carrigahorig, Lower Ormond, county of Tipperary.

Besides the foregoing articles of the Food-implement species, the Academy possesses the following specimens of pottery:—Nos. 8 and 9 on Shelf II., and Nos. 10, 11, 12, and 13, in the lower compartment of this Case. The first of these ar-

ticles, represented by the accompanying cut (Fig. 112), is an unglazed earthen vessel, apparently much burned, and in shape something between the urn and the bowl. It is undecorated, except by a slight indentation encircling the edge, and is 4 inches high, and $5\frac{1}{2}$ across the mouth. No. 9 is the lower portion of an earthen vessel of burned pottery, unglazed,



Fig. 112. No. 8.



Fig. 113. No. 12.

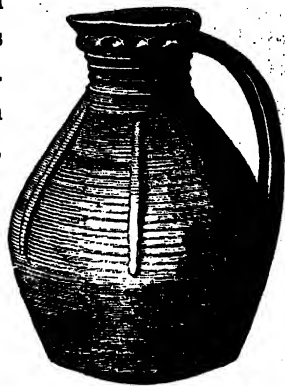


Fig. 114. No. 10.

4 inches high, and $6\frac{3}{4}$ wide. It stands on a broader base than the former, and contains a quantity of broken-up bronze, probably about to be smelted, viz., two socketed celts, a piece of a gouge, and several broken rings, to be described in Class V.; and also a quantity of fine dry sand. It was found in the townland of Ballyvadden, parish of Kilmuckridge, county of Wexford, "three feet below the surface, with a flag placed over it; it contained no remains of bone." It was—*Presented by the Rev. Mr. Armstrong.* See Proceedings, vol. iv. p. 369; see also Transactions R. I. A., vol. xxii. p. 333.

LOWER CASE.—No. 10 (Fig. 114) is an ancient pitcher, 13 inches high, and 32 in girth, very thin, and of so light a description of pottery as only to weigh 5 lbs. 10 oz. It is stained of a dark colour on the outside, and partially glazed, and is so globular at the bottom that it cannot stand upright. It is tastefully decorated round the neck, and also for some distancedown the sides; and the handle forms a different curvature from any vessel of the kind of a modern description. This pitcher was found in a crannoge at Lough Faughan, barony

of Lecale, county of Down. No. 11, in the same Case, is a thin, globular vessel of a calabash-shape, unglazed, and in material resembling the foregoing. It has no handle, and is but very slightly decorated round the lip; it measures $8\frac{1}{2}$ inches high, $27\frac{1}{2}$ in circumference, and $4\frac{1}{2}$ in the clear of the mouth. No. 12 (Fig. 113) is a vessel of rude unglazed pottery, of a reddish colour, and, except that it wants a handle, greatly resembles the amphora or wine-vase of the ancients. It is 11 inches high, and 5 wide at the broadest part. This unique specimen was dug up in 1851 at Cartron, near Castle Kelly, county of Galway, and was—*Presented by D. H. Kelly, Esq.* No. 13 is the top of a two-handled vessel of rude pottery, found in the Deel river, county of Louth, and —*Presented by the Board of Works.*

RAIL-CASE C.—Among the articles of Household Economy and domestic use, and those subservient to Dress and Personal Decoration (Species iv. and v.), we find examples of smoking pipes, and curling-pins of clay, and some beads and rings of glass, porcelain, and enamel; and among the ecclesiastical antiquities we find both coloured glass and many beautiful specimens of enamel, which will be described along with that class.

SMOKING-PIPES, of a very primitive fashion, small in the bowl, and thick in the shank, have been found in great numbers in Ireland, but are of far less antiquity than is usually assigned to them.

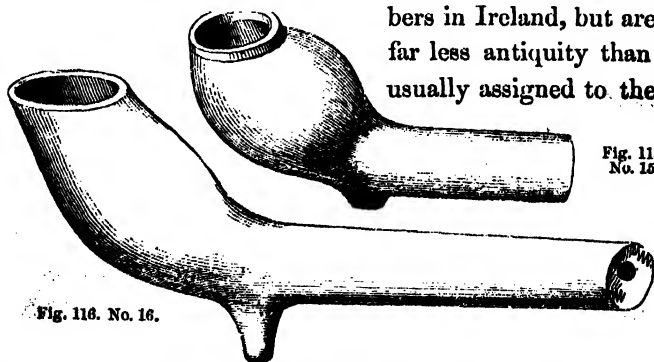


Fig. 116. No. 16.

Fig. 115.
No. 15.

The accompanying illustrations, the natural size, may be taken as types of the two most frequent forms,—those with

short globular bowls contracted at the open end of the head, Fig. 115, No. 15, and those with long narrow bowls, Fig. 116, No. 16, both generally set on to the shank at a more obtuse angle than the modern tobacco pipe, than which they are also much thicker in the stem. The bowls of these pipes vary from 1 to 2 inches in length.* Metal smoking pipes, much resembling in form the larger of the foregoing, may also be found in the Academy's collection.

Whether tobacco, believed to be introduced by Sir Walter Raleigh about the end of the sixteenth century, was the only substance smoked in these pipes, or whether any narcotizing indigenous plant was employed, we have now no means of determining, but there is no warrant for asserting that they are older than the introduction of tobacco into the British Isles. From the fact of many of them having been found in caves and subterranean passages, ignorantly supposed to be the work of our Scandinavian visitors in former times, they have improperly been denominated "Danish pipes." The sixty-five specimens of ancient clay pipes in the collection will be found in Rail-case C. Of these, many were found in street-cuttings for the Dublin sewerage, some were found in the Shannon, and others came from various localities throughout the country.

PAVEMENT TILES, assumed to have been manufactured in Ireland, have been found in great numbers in the ruins of early ecclesiastical structures, and particularly in the Cistercian abbeys of Mellifont, Bective, Newtown, Trim, &c.; and many are still to be seen *in situ* in St. Patrick's Cathedral in Dublin. The Royal Irish Academy possesses a large collection of these tiles, some of a very rude description, and others exhibiting a considerable advance in the art of pottery. A selection illustrative of the different varieties of pavement tiles will be found at

* See the late Crofton Croker's paper on ancient tobacco-pipes in the "Dublin Penny Journal," vol. iv. p. 29. See also the "Proceedings and Transactions of the Kilkenny and South-East of Ireland Archaeological Society," vol. iii. p. 308.

the bottom of the case containing the other articles of earthen material, and arranged according to the division made by Professor Oldham, in his work on "Ancient Irish Pavement Tiles existing in St. Patrick's Cathedral, and Howth, Mellifont, and Newtown Abbeys,"* to which several of these specimens serve as illustrations. They are of three kinds: first,—Impressed, in which the pattern is sunk into the tile (see Nos. 1 to 5); second,—Encaustic, with a smooth, flat surface, the pattern being produced by an inlaid coloured substance (Nos. 6 to 10); and, third,—the Raised Pattern tile, in which the figure or ornament is in relief (Nos. 11 to 15). Behind these have been arranged many other specimens, not numbered, but illustrative of the three foregoing varieties; and in the crypt of the Museum will be found a large collection of pavement tiles, from different localities in Ireland, characteristic of these typical forms, and well worthy the attention of those interested in tessellated or encaustic work. Most of these tiles resemble in size No. 1, which is a plain red tile, about $4\frac{3}{4}$ inches square, with an indented pattern, into which a yellow glaze appears to have been run. No. 2, a rude red tile, impressed with the figure of a tree, was procured from Mellifont Abbey, and was—*Presented by Lieutenant Newenham*. It is, in all probability, coeval with the foundation of that structure which was erected in the middle of the twelfth century. No. 3 is impressed with the figure of a wild boar (see No. 1 of Mr. Oldham's collection), and is probably one of the oldest representations of that animal now extant in this country. An unnumbered specimen, placed immediately behind it, represents another wild boar. Nos. 4 and 5 are specimens of the first variety, in which each tile was perfect in itself; whereas in those of the second and third varieties, particularly the latter, four tiles are required to make up the pattern. The encaustic tiles are

* Dublin: J. Robertson. See also Proceedings of the R. I. A., vol. ii. p. 352, and the Rev. James Graves' paper on this subject, in "The Transactions of the Kilkenney Archaeological Society," vol. i. p. 88.

usually smaller than either of the other varieties; the ground is either dark purple or red, and the inlaid pattern white. Of the third variety, from Nos. 11 to 15, the specimens are evidently much more modern, and most of them are covered with a thick yellow glaze.

No. 16, in this case, is a piece of pottery tubing, 13 inches long, and 2 wide in the bore, with a screw at one end, apparently to attach it with greater accuracy to the adjoining portion. It was evidently an ancient water-pipe, and was found in a sewerage excavation in the city of Dublin.

ORDER II.—GLASS AND ENAMEL.

SPECIES V.—ARTICLES OF DRESS AND PERSONAL DECORATION.

WITH the exception of eleven curling-pins, composed of fine white pipe-clay, arranged after the pipes in Rail-case C, nearly all the articles of this species belong to the second order or subdivision of Class II. These articles vary from about $2\frac{1}{2}$ to 3 inches in length, and several are stamped at the end; some with the letter M. They are now generally believed to have been used as wig-pins, for holding in curl that portion of the dress of the last and two or three previous centuries.

It is probable that one of the first uses of glass was that of personal decoration; and to this day, in the rudest states of society, from the Equator to the Arctic regions, glass beads and trinkets are objects of attraction, and eagerly sought after by both sexes. When glass was first introduced into, or when first manufactured in Ireland, are questions which we have now no means of solving; we have merely to deal with such relics of that art as have come to light in our own times, and specimens of which are to be found in the Academy's collection. In Rail-case D may be seen a number of small articles of glass, connected with personal decoration, and a few of fine porcelain and enamel serving the same purpose.

They consist of globes of impure glass, generally opaque, or nearly so; glass beads, of uniform colour, plain or decorated; rings of the same material and of the same varieties in style; and beads of vitreous paste, or porcellaneous enamel, holding a middle place in material between pottery and glass. The artist having achieved some decided colours, principally shades of blue, white, yellow, and pale-red, produced a form of ornamentation by fusing or blending them together, so as to give a variegated appearance; the perfection of which art resulted in enamelling, where the different colourings were given definite and determined shapes, so as to represent exact figures, and of which many examples will be found in these ornaments, as well as those of the ecclesiastical antiquities. Blue and white were the colours generally used in producing the desired effects of this art. Another form of art was that in which a coloured ornament, generally white, was laid upon a dark-coloured ground, from which it stood out in high relief. The accompanying illustrations afford, as far as it is possible to do by uncoloured

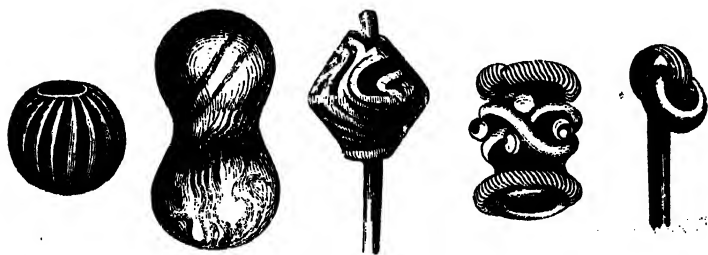


Fig. 117. No. 27. Fig. 118. No. 42. Fig. 119. No. 39. Fig. 120. No. 41. Fig. 121. No. 40.

figures, types of the various forms of art, as well as of the varieties of such personal ornamentation in use among the inhabitants of this country during what may be termed medieval times. No. 27, Fig. 117, is an opaque glass bead, light-green in colour, and grooved in melon-shape; the aperture is rather large, so that it may have been used on a neck-lace or as a pin-bead. No. 42, Fig. 118, is a double bead, 1½

inches in length, in which three colours were evidently worked together, the ground being a light blue-green, with some whitish and a few yellow stripes; it is a good representative, in material, of the second form of art in glass-working, although it appears to be in advance, as a personal ornament, upon those preceding it. The metal stem to which it formed the head was probably twisted or welded round the central or narrow portion. Our Collection contains as many as thirteen such double beads in Rail-case D, numbered from 42 to 54, and decreasing in size gradually, from that represented in the foregoing cut, which is the largest in the set, to No. 53, which is only $\frac{3}{8}$ ths of an inch long. No. 39, Fig. 119, is an encaustic porcelain pin-bead, $\frac{5}{8}$ ths of an inch high, and nearly the same across the widest portion; it was found with its bronze stem, which is $3\frac{1}{2}$ inches long, attached. The mass of this bead is a fine light-red porcelain, but the surface is decorated with white wavy stripes; and yellow streaks ornament the bottom, and surround the middle projection. No. 41, Fig. 120, is a cylindrical bead, 1 inch in length, with a raised ornament in white enamel upon a deep blue ground. Upon the side are two yellow spots and three bosses, as shown in the cut; an elevated band surrounds each end. No. 20, in the collection of personal ornaments, found in the Dunshaughlin crannoge, is of the same character. No. 40, Fig. 121, is a simple ring of plain blue glass, used as the decoration to a bronze pin of about the same size as No. 39.

Of the antique specimens of enamelled glass, the probable production of native ingenuity and handicraft, in which the pattern represents a definite and often delicately traced figure, may be specified Nos. 13, 19, 21, 23, 24, and 82; but the most remarkable object of fictile ware of this description in the Collection is the flatted bead or circular disc, No. 103, figured the actual size on the opposite page, and in which the colours are dark-blue and white, tastefully arranged like an open flower. It is $1\frac{3}{4}$ inches in diameter, and $\frac{1}{2}$ an inch

thick. The white enamel is only on the surface. Sometimes the secondary colour was thrown on without any regularity or attempt at pattern, as in rings Nos. 12 and 16; but in others it presents very graceful arrangements; an example of which may be cited in the yellow spiral ornament which forms the decoration on the bead of clear glass, No.

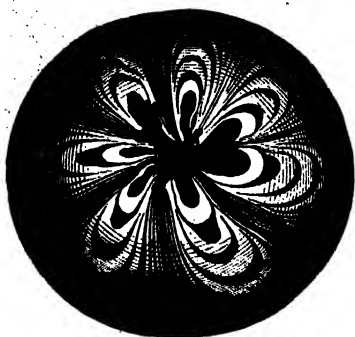


Fig. 122. No. 103.



21, here figured the Fig. 123. No. 21.

natural size. Similar spiral marks, it will be remembered, form some of the decorations on our earliest stone monuments. Bead, No. 109, presents two spires, the lines of which are continuous, crossing one another at acute angles. A herring-bone ornamentation, in white, on a blue ground, is not uncommon in some of these glass or enamel beads (see specimens, Nos. 19 and 23, &c.) One of the rarest forms of ornamentation in the collection is that shown on No. 104, the large ring-bead found along with the Danish weapons discovered at Kilmainham, near Dublin. It is of light-green glass, $\frac{3}{4}$ ths of an inch in diameter upon the external surface, on which there are as many as forty-one small circular indentations, into which originally fitted studs of yellow enamel or vitreous paste, slightly raised above the surface; about one-half of these still remain, the others have fallen out, leaving the surface of their apertures quite rough, as if they had been drilled.

Besides the beads, single or double, either for pins or necklaces, and the rings apparently used for the same purpose, we find a slight ring of green-coloured glass, of a larger size than any of the foregoing (see No. 115), which, when perfect, was about $2\frac{1}{2}$ inches in the clear, and may have been used as a bracelet. See page 168.

RAIL-CASE D, in the Eastern Gallery, contains all the small specimens of porcelain and glass, viz., the crucibles, pipes, wig-pins, and objects of personal decoration; the Chinese Seals; and examples of stained glass.

No. 1 is a small glass vessel, not unlike an ink-bottle, $1\frac{1}{2}$ inches high, and $\frac{3}{4}$ ths broad. No. 2 is a small glass globe, open at the top; "found near a mountain altar at the foot of Slieve Gullion." No. 3 is a glass ball, $1\frac{1}{2}$ inches in diameter, found at Clogher, county of Tyrone; it and No. 2 were—*Presented by J. Huband Smith, Esq.* No. 4 is a globular piece of dark-coloured glass, slightly mottled with white and green, smooth on the surface, and about 1 inch in diameter. No. 5 is a globular piece of transparent glass, $\frac{3}{4}$ ths of an inch in diameter. Nos. 6 and 7, two opaque blue glass beads, each about $1\frac{1}{2}$ inches in diameter. No. 8, a dark-coloured glass bead, presenting several sides, as if formed by rubbing. No. 9, a glass bead, $\frac{3}{4}$ ths of an inch in diameter, composed of several colours,—gray, light-blue, and brown,—tastefully arranged. No. 10 is a ring-bead of light green glass, $1\frac{3}{8}$ inches in diameter. No. 11, a ring of impure brown-coloured glass, is $\frac{7}{8}$ ths of an inch in diameter. No. 12, a ring of dark-coloured glass, with an irregular raised ornament of white enamel; it is 1 inch in diameter. No. 13, a very beautiful bead of light blue glass, with a snake-like ornament of white enamel raised upon the side; it is $\frac{3}{8}$ ths of an inch in diameter. This and the foregoing were found on the townland of Emylay, near Emyvale, county of Monaghan. No. 14 is a glass bead, $\frac{3}{4}$ ths of an inch in diameter, of a brown colour, with masses of white, red, and light green enamel mixed through it, like conglomerate. No. 15 is a similar bead, but somewhat smaller, and the colours much brighter, and containing the additional ones of yellow and light blue. No. 16 is a dark glass bead, with an irregular pattern running through it, not unlike that in No. 12; it is, however, polished on the surface, and is $\frac{7}{8}$ ths of an inch in diameter. No. 17 is a very rude glass bead of a uniform light blue colour, and grooved on the sides like No. 27. It is $\frac{7}{8}$ ths of an inch in diameter. No. 18, a plain semi-transparent glass bead, $\frac{5}{8}$ ths of an inch across. No. 19, a very beautiful glass bead, something more than $\frac{3}{4}$ ths of an inch in diameter, of a light blue colour, with a white enamel line running through it, in a regular herring-bone pattern.

Nos. 20 to 38 form a collection of nineteen beads found in the Dunshaughlin crannoge. Of these, No. 20 is a long cylindrical bead, like Fig. 120, composed of blue, white, and yellow enamel; it is $\frac{3}{4}$ ths of an inch long, and is decorated with a blue and white band round each extremity, and yellow spots in the centre. No. 21 is one of the most beautiful beads in the Collection; it is $\frac{1}{2}$ an inch in the longest diameter; is composed of clear glass, with bright yellow spirals of opaque enamel covering its sides (see Fig. 123). No. 22 is a plain light-green bead, $\frac{7}{8}$ ths of an inch in diameter. No. 23 is a small blue bead, with white enamel, forming a herring-bone marking through it, much like No. 19. No. 24, a small fine bead of porcelain, like No. 39, with the surface enamelled in rings of white, light-blue, green, and yellow, traversed by streaks of light brown. Nos. 25, 26, 33, 34, 35, and 36, are small blue glass beads, similar to those in present use. No. 33 has a piece of silver wire twisted through it. No. 27 is that represented by Fig. 117. Nos. 28 to 31 are amber beads, of an irregular form, and averaging about $\frac{5}{8}$ ths of an inch in diameter. No. 32 is a figured bead of transparent glass; and No. 38 is a small white enamel ring-bead, $\frac{3}{8}$ ths of an inch in diameter.

No. 39 is the pin-bead of porcelain represented by Fig. 119. No. 40 is the cylindrical bead given as Fig. 120. No. 41 is the ring-bead fastened to its bronze stem (see Fig. 121). No. 42 is the double bead illustrated by Fig. 118. Nos. 42 to 54 are a series of the same description of ornament, gradually decreasing in size from the first, which is above an inch long, to the last, which is only $\frac{3}{8}$ ths in its greatest diameter. They are either light-green or blue, except No. 47, which is yellowish. Nos. 54 and 57 are two beads, the former a small specimen of the double kind, and of a green colour, and the latter a long or barrel-shaped bead of amber; they were found together with a piece of jet bracelet, a bronze pin, and a bit of metal ore, in the Dowth excavations. Nos. 55 and 56 are double beads, but of a different variety to the foregoing. Nos. 57, 58, and 59, are barrel-shaped, each about $\frac{3}{4}$ ths of an inch long. Nos. 60 to 73 are alternate large white and small dark-coloured beads, forming a necklace, which was found at Templepatrick, county of Antrim. Nos. 74 to 92 are nineteen glass beads, small in size, and of a variety of colours, but mostly white, blue, or amber. No. 91 is

CATALOGUE OF THE MUSEUM.

an amber-coloured bead-ring, of impure glass, $\frac{3}{4}$ ths of an inch in diameter; and No. 92 is the same description of ornament, but something smaller. Nos. 93 to 102 are a collection of ten beads, found in the Strokestown crannoges. Of these, Nos. 93 and 94 are small wooden beads; 95 is a beautiful porcelain bead of reddish-brown, with raised enamel marks of a lozenge shape, in yellow; in the centre of each lozenge is a raised stud of light-green enamel, with a milk-white border; it resembles No. 39, but is even a more beautiful specimen, both in design and execution, than it. No. 96 is a dark-blue glass bead, of a melon shape, like No. 27. Nos. 97 to 104 are amber beads, some of a very impure description, and rudely formed, 98 being an irregularly-shaped piece of that material. No. 99 is an interesting specimen, from its containing a portion of the copper-wire chain which connected these articles. No. 102 is a well-formed flat amber bead, found in the crannoge at Clonfree Lake, in the county of Roscommon, and—*Presented by Lorenzo Lawder, Esq.*

No. 103 is the large flattened disc of enamelled glass, represented and described as Fig. 122, on page 165.

Nos. 104 to 114 are eleven beads, supposed to have formed a portion of a necklace. They were found at Kilmainham, near Dublin, along with some iron swords believed to be of Danish origin. No. 104 has already been described on page 165. Nos. 105 and 106 are very rough ring-beads, of coarse green glass. Nos. 107 and 108, two beads of dark-blue glass, ornamented with a light-blue stripe, the former chequered, the latter spiral. No. 109 is a small blue and white ring-bead. No. 110 is of clear, bright-green glass. Nos. 111 to 114 are opaque glass beads, the three first white, and the last orange-colour. All these were—*Presented by Mr. G. Young.*

Nos. 115 and 116 are fragments of two ancient rings, the former of glass, and the latter of jet, said to have been discovered entire in a mound at Dunadry, county of Antrim; together with the peculiarly shaped stone vessel, No. 38, in the second Cross-case of the Stone Compartment (see p. 141). They were—*Presented by J. Hubbard Smith, Esq.* No. 117 is an oval piece of glass, $1\frac{1}{2}$ inches long, probably an amulet, with a cross indented upon it.

No. 118 is a ring-bead of glass and porcellaneous enamel, blue, red, and white, the latter colour arranged in two wavy lines round the edge. No. 119, a pair of shirt-studs of copper, with blue glass

settings. No. 120, a large coat-button of copper, with blue and yellow figured enamel on the surface—the true *revetment*. No. 121, a copper coat-button, with a glass front. This and No. 119 were, probably, plated originally. No. 122, a large boss of dark glass, 3 inches across, and $1\frac{3}{4}$ high; it was found, with the ancient Danish weapons, at Kilmainham. Nos. 123 to 180, a necklace of amber-coloured glass beads.

An analysis of some of the coloured glass beads in the Academy's collection was made by Mr. J. W. Mallet in 1853. See his Report in the Transactions, vol. xxii. p. 338.

No. 58 is a beautiful bowl-shaped bead of white enamel, decorated with three light blue lines passing round it spirally, was found at Trim, along with one gold and three silver brooches. It—together with some specimens of ancient stained glass from Newtown Abbey, near Trim, and some lead fittings—was—*Presented by the Very Rev. R. Butler, Dean of Clonmacnoise*.

This stained glass is of three kinds, viz.: No. 1, specimens of pot glass, in which the colour of the metal is thorough; No. 2, flake glass, in which a layer of coloured glass was rubbed on; No. 3, several specimens of true stained or painted glass; No. 4, a piece of glass in its surrounding lead-work.

For a description of the Chinese seals, which follow next in this case, see page 195.

ORDER I.—CASE I.

SPECIES IX.—SEPULTURE.

SEPULCHRAL URNS.—The number of urns, containing incinerated bones of men or the lower animals, which have, from time to time, been discovered in Ireland, either as the result of accident, treasure-seeking, or to gratify idle curiosity, is very great; but, unhappily, the majority of them have been destroyed. They have been found singly in small kists, or stone chambers, beneath the surface of the ground, or aggregated, generally in earthen mounds, sometimes to the

amount of above one hundred, as in the Hill of Rath, near Drogheda,* and at Ballon Hill, county of Carlow,† or within the mound of a cairn or tumulus, of which the one discovered in the Phoenix Park, near Dublin, some years ago, afforded a remarkable example.

It is difficult to form an unexceptionable classification of mortuary urns, according to size, shape, or ornamentation; and except where other objects besides bones are found therein, such as metallic weapons, &c., anything like a chronological arrangement of them would be impossible. The skill displayed in the construction of the material, or in the formation of the pattern worked upon it, is not, of itself, sufficient to warrant us in assigning to these fictile vessels comparative ages, no more than the remains of earthen materials, from the rudest pottery to the finest porcelain of the present day, could afford the inquirer, some centuries hence, a means for chronologically classifying the pottery of the nineteenth century. The varieties exhibited by these urns may be characteristic of peculiar races, tribes, or persons, or expressive of their cost and value, or of the art of the day. But the first step in inquiring into the comparative ages of these vessels should be a careful personal examination of the excavations either undertaken for their investigation, or occurring accidentally; all the circumstances attending their discovery should be accurately noted at the time and on the spot; and in no instances should workmen be sent to excavate without directions to stop the moment they arrive at a stone chamber, until competent persons are present. We also earnestly entreat those who undertake the examination of tumuli to make themselves, in the first instance, acquainted with whatever is at present known on the subject.

* See Mr. J. Huband Smith's communication in "Proceedings of the Academy," vol. ii. p. 259.

† See Rev. James Graves' Paper in the "Transactions of the Kilkenny Archaeological Society," vol. ii. p. 295.

As already stated, Irish cinerary urns have been found under three circumstances:—In small kists, placed without any ostensible mark, at least at the present day, beneath the surface of the soil, each just sufficiently large to hold one or two vessels. The chamber is sometimes occupied with the urn and its contents alone; in other cases it also contains charcoal and portions of burned bone; and in some instances the flooring-stones have become vitrified upon the upper surface, thus leading us to believe that the funeral pyre was lighted over the grave after it was formed; of this, the charcoal and the vitrification of the stones afford presumptive proof. These small chambers are sometimes found near the surface, or in the periphery of the large tumuli that usually cover cromlechs or surround extensive sepulchral chambers, and appear to be of a much more recent date than the original structure of the tumulus in which they are placed. Such minor interments may have been those of the family or descendants of the persons originally interred beneath; or the place—strong in the odour of sanctity—may have been resorted to as a burial-ground long subsequent to its original formation, from that feeling of veneration which instinctively consecrates the resting-place of the dead. These urns are also found imbedded in the earth, in which case they are generally aggregated in cemeteries upon the sides of hills.

It does not, however, follow that either cremation or urn-burial was the earliest form of sepulture adopted on this island; on the contrary, there is every reason to believe that the bodies (of distinguished persons, at least) were interred entire within the chambers of cromlechs, clothed in the costume of the period, decorated with the ornaments suited to their rank, armed with the weapons belonging to their tribe or condition, and accompanied by the bodies of their favourite animals, who were probably sacrificed on the occasion to their manes. Hundreds of those cromlechs stud the face of the country, and many still remain enclosed

within their enveloping earth-mounds; the chamber, in each instance, being capable of holding one or more human bodies, either in a horizontal, sitting, or recumbent position. Urns containing calcined bones of men or animals may have been discovered within the cromlech chamber, but the authorities upon that subject are defective, and much yet remains to be cleared up in this inquiry. Subsequently we find the ashes of the dead collected into fictile vessels, and placed in small chambers upon the surface, or within the body of the earthen mound.* So early as A. M. 3959, we learn from the Books of Leinster and of Lecan, that the body of Slanoll, son of Ollamh Fodhla, was buried in the earth. But even after the Christian era, we read in one of our ancient topographical Irish MSS., when describing the raths at Tara, that "the body of Laoghaire"—one of the last Pagan kings of Ireland—"was interred, with his shield of valour, in the external rampart in the south-east of the royal Rath of Laoghaire at Tamur, with his face to the south, as if fighting with the *Lagenians*," or Leinster-men.† Laoghaire, son of Niall of the Nine Hostages, died at Cassi, in the plain of the Liffey, about the year A. D. 458. Eoghan Bel, King of Connaught, was also interred, with his red javelin in his hand, and his face turned towards Ulster.‡ According to a popular tradition, many of these cromlechs are still styled *Leaba Diarmada agus Grainne*, "the bed of Dermot and Grace," concerning whom there are many legends still afloat

* The examination of cromlechs and sepulchres made of late years in the Channel Islands, by Mr. Lukis, does not in any way militate against the foregoing facts. Moreover, there is no authority for believing that Ireland and the Channel Islands were inhabited at the same time, and by the same race. See "Archæological Journal," vol. i. pp. 142 and 221.

† "Leabhar na-h-Uidri." See also the Translation of the "Dinnseanchus," given in Petrie's "Essay on the History and Antiquities of Tara Hill," in the *Transactions R. I. A.*, vol. xviii. p. 137. See the authorities respecting Laoghaire's death in the Author's Report upon the Tables of Deaths, in the Census of Ireland for 1851, Part V., vol. i. pp. 44, 45

‡ See O'Donovan's "Tribes and Customs of Hy-Fiachrach," p. 472.

among the Irish peasantry; and also some romantic Finnian tales, descriptive of their history.* Cromlechs are in some places called "Hags' Beds."

Urns vary in position, some being erect, and others inverted; their contents, in both instances, consist of fragments of bones, bearing unmistakable evidence of the action of fire. A sufficient quantity of these bones has been examined to prove them human, and we have a large collection of them in the Museum. The body must, therefore, have been burned, and the bones reduced to this calcined condition before they were placed in the urn; and, from the circumstance already stated, it is probable that the cremation took place upon the spot, and that the charred wood and vitrified stones were the result. Besides these human bones, those of minor animals have been found, but often much less calcined than the human remains; therefore, it may be conjectured that such animals were thrown as sacrifices on the expiring embers. In some cases two urns have been discovered, the one placed within the other; and, in one instance, a small urn was found inverted over two small bones (of the hand and foot), probably of some distinguished person, which were lost in battle. Most of these urns are hand-formed, without the assistance of a wheel, and were probably made at the grave with the materials most ready at hand, and placed, while in a soft state, within the burning embers, which, with the surrounding hot stones and clay, served as a kiln for baking them. The fact of urns having been found in a bent or crushed condition lends probability to this conjecture; but others were evidently formed with greater care, and appear to have been specially prepared for the purpose.

In some of the rudest specimens, which are always the most fragile, the material is a coarse clay, with scarcely any admixture of sand; but in those which show a higher

* See "The Pursuit after Diarmuid O'Dubhne and Greine," now publishing by the Ossianic Society, vol. iii.

degree of culture in the makers, sand and small fragments of stone, possibly broken for the purpose, were mixed through the plastic mass, and also rubbed (perhaps to assist in drying as well as in giving them stability) upon the inner surface, especially near the bottom. A micaceous clay appears here to answer the same end ; but in some of the very fine specimens minute particles of quartz and felspar may be observed coating the interior, which, from the sharpness of their fracture, would appear to have been broken specially for the purpose. These fragments of sand or stone may also be seen in the fracture, but are never observed upon the outer surface. In colour our Irish urns differ considerably upon the outer and inner surfaces. The latter is almost invariably blackish, or dark brown, the result of partial torrifaction, and perhaps from the heated bones and charcoal placed within them, either when soft, or after they had been sun-baked. This colour generally passes through four-fifths of the mass. The outer surface is either a light-red, gray, or brown ; the first is most usual, and appears to be the result of the atmosphere, which was, however, excluded from the interior by the mass of the contents of the urn. The colour of the exterior usually passes for some distance within the lip. The drab or clay-coloured urns bear but little mark of fire either within or without (see, in particular, No. 21). The brown belongs only to the thinnest and hardest description of pottery, of which Nos. 13 and 25 are examples. Assuming that the majority of the mortuary urns (except those used for very distinguished persons) were constructed at the grave, the artist was indebted to the clay at hand in the locality for the materials with which he worked, and hence the great variety in the composition of our cinerary earthenware.

In form these urns vary from what may be termed the vase-shape, in which the vessel is higher than it is broad, the base or foot being the narrowest portion, swelling

above the centre and again contracting slightly near the mouth;—to the bowl-shape, in which the breadth and height are nearly equal; the former are represented by Nos. 19, 23, 29, and 31, and the latter by Nos. 8 to 13, and also 15 and 17, in this collection, while of an intermediate class may be specified No. 14, which differs from all others in being provided with a handle. Although the collection of urns in the Museum of the Royal Irish Academy is but in its infancy, we may yet safely assert that it contains one of the largest and smallest vases discovered,—the former, No. 31, being 16 inches high, and 15 across the opening; and the latter, No. 14, being only two inches high, and standing upon a base but $\frac{1}{2}$ an inch wide.

Most of these vessels appear to have been formed by the hand; those which appear to have been formed upon a wheel, such as Nos. 13, 14, 21, and 25, being the exceptions. Their decorations present great diversity: the rudest appears to have consisted in a number of dots or oblique indentations, made with the point of a stick, without any regularity, all over the outer surface of the vessel (see fragments of Nos. 32 and 34); raised hoop-like marks or ridges, formed either by the hand or by the wheel, the latter is exhibited by No. 13, and the former by Nos. 40 and 41; circular indented lines, scratched into the soft clay, and generally dividing the vessel into an upper and lower section, as in No. 27; and, finally, upright, horizontal, chevron, or zig-zag lines between these circular indentations, are shown in some of the better-formed urns; many of these lines have a pectinated appearance, as if indented with a traverser, or the rowel-like instrument such as that used by pastry-cooks. Sometimes simple scratches with the point of a sharp tool form the entire, if not a portion of the ornamentation, as in Nos. 22 and 27. A herring-bone decoration, produced by a number of short lines passing obliquely from either side of a real or imaginary line, is not uncommon upon the lips of urns (see No. 21). Indentations, apparently made with the top

of the finger; others bearing all the appearance of having been made with the point of a flint arrow; rope-like markings, either in intaglio or relief; and embossed patterns, evidently formed by a stamp, as in Nos. 12 and 25, may be observed, and were apparently executed upon the plastic clay. In No. 21, however, the decoration appears to have been effected by some sharp cutting tool, after the vessel had been sundried to a degree of excessive hardness. It is remarkable that, although the ancient zig-zag ornament is frequently met with in the most primitive urns, no trace has been found of the spire which characterizes the decorations of some of the very oldest sepulchral monuments in Ireland; but a peculiar form of ornamentation, made by straight lines, is identical with that on some carved stone at the entrance to the most remarkable of these edifices,—that of New Grange (see urn, No. 7).

So far as trustworthy descriptions of the contents of these kists and urns discovered in Ireland afford information, the objects found therein, in addition to the bones, have been, with few exceptions, of the rudest description, and generally non-metallic, such as flint and stone weapons, tools, or ornaments, a few trifling articles of bone,—possibly pins for holding up the hair,—and some shells. In one instance a thin scale of bronze was found in a cinerary urn (see No. 31). Such articles bear unmistakable traces of the action of strong heat, and were probably worn on the body when subjected to cremation. See Nos. 19 to 25, in Rail-case C, page 150.

With the various forms of sepulture generally we do not deal in this section, which is only a brief description of urns and the circumstances under which they were found. Urn burial is always associated with Cremation, but, as this was a purely Pagan rite, superseded by the inhumation taught by Christianity, it may safely be asserted that it existed in Ireland up to the middle of the fifth century; but even long after that period, it was probably resorted to by the

half Christianized natives,—burial rites and the ceremonial of the tomb being amongst the last usages changed by a nation when passing from one religion to another.

The following specimens will illustrate this subject.

Fig. 124, drawn from No. 1, represents one of the smallest and rudest urns in the Collection; it is totally unornamented, and only 2 inches high. It contains fragments of the incinerated bones originally found in it (see p. 183). The two next



Fig. 124. No. 1.

specimens, drawn from Nos. 21 and 25, are good examples of the high or vase-shaped urn, contracted at the neck; the former (Fig. 125), which is that alluded to at pp. 174 and 176, is $5\frac{1}{4}$ inches high, and 6 broad; it is of a light gray



Fig. 125. No. 21.



Fig. 126. No. 25.

colour, and of stony hardness, although apparently sun-dried, and bearing, even on the inside, scarcely any marks of fire; a chevron band surrounds the middle; both it and the dotted marks and circular lines all appear to have been cut out with a punch or sharp tool after the clay had hardened, and they are, therefore, of a much lighter colour than the rest of the surface. A herring-bone ornament surrounds the lip. The latter specimen, No. 25, Fig. 126, of a very dark colour, and so smooth as to appear glazed, is one of the most beautifully decorated urns in the collection. It is $6\frac{1}{2}$ inches high, and 5 in diameter at the widest part, and is embossed with three sets of leaf-like marks, evidently impressed with a stamp, while slightly elevated horizontal lines pass between each leaf,

and upright markings fill the spaces between each set of leaves. A rope-like ornament encircles the edge, and the lip is also slightly decorated with a continuous oval-shaped pattern.

The two next figures, drawn from Nos. 12 and 13, present good examples of the globular or bowl-shaped variety.



Fig. 127. No. 12.



Fig. 128. No. 13.

No. 12, Fig. 127, is 4 inches high, and $5\frac{3}{4}$ wide. It is of rude material, and stands upon a wider base than either of the foregoing.* Its decoration consists in two sets of oval or lozenge-shaped marks, impressed upon it by apparently the same tool, and having a zig-zag line, beneath a rope ornament, intervening. No. 13, Fig. 128, is the most perfect specimen of the thin, light pottery of ancient times which has yet been found in Ireland, and was evidently formed upon a wheel. It is of a light-brown colour, and almost as smooth as modern delph. It is $3\frac{3}{4}$ inches high, and 6 wide, but not more than $\frac{1}{4}$ th of an inch in thickness (see p. 187). The decorations consist of upright and horizontal lines, in addition to which it presents several elegant curvatures of outline which greatly increase the effect.

Beautiful, however, as the shapes and decorations of these vessels undoubtedly are, they fall into comparative insignificance when placed beside No. 14, shown by Fig. 129, on the opposite page (drawn two-thirds its natural

* The woodcut of the urn No. 12, Fig. 127, is that used in Wakeman's "Hand-book of Irish Antiquities," and the drawing is not made to the same scale as that of No. 13, Fig. 128.

size), which, so far as the published accounts afford us information, is the most beautiful specimen of the mortuary urn, both in design and execution, that has yet been discovered in the British Isles. When reversed, the bowl presents both in shape and ornamentation all the characteristics of the Echinus so strongly marked, that one is led to believe the artist took the shell of that animal for his model. It is



Fig. 129. No. 14.

composed of very fine clay, and is now of a light-brown colour, except where encrusted upon the edge and one side with carbonate of lime, which dripped upon it in a fluid state (possibly for centuries) and which largely assisted to preserve the sharpness of its decoration. It possesses the rare addition of a handle, which has been tooled over like the rest of the vessel. This beautiful little urn stands but $2\frac{1}{2}$ inches high, and is $3\frac{1}{2}$ across the outer margin of the lip, which is the widest portion. Its decoration consists of nine sets of upright marks, each containing three cross-barred elevations, narrowing towards the base, which is slightly hollowed; the intervals between these are filled with more elaborately worked and minute impressions, each alternate space being further ornamented by a different pattern, as shown in the engraving. A rope-like ornament, surmounted by an accurately cut chevron, surrounds the neck. The lip, which is nearly flat, is one of the most beautifully ornamented portions of the

whole: a number of small curved spaces such as might be made by the point of the nail of the forefinger surround the outer edge, and also form a similar decoration on the inner margin; upon the flat space between these, somewhat more than half an inch broad, radiate a number of very delicately cut lines.

It was discovered in 1847, in the cutting of a railway, in a small stone chamber at Knocknecoura, near Bagnalstown, county of Carlow; and contained portions of the burned bones of an infant or very young child. It was embedded in a much larger and ruder urn, filled with fragments of adult human bones; possibly they may have been the remains of mother and child.*

Some years ago the opinion, not merely of the public at large, but of a few professing antiquaries, was, that cromlechs were "Druid altars;" and, in lieu of any very well-established facts, vague speculations upon the subject were propagated. The following discovery went far to establish the belief that cromlechs were but uncovered tumuli, which originally contained sepulchral remains. In the Phoenix Park, near Dublin, to the west of the Hibernian Military School, a tumulus of about 120 feet in diameter at the base, and 15 high, existed upon an elevation known in the neighbourhood by the Irish appellation of *Knockmaridhe*, or "the hill of the mariners." In levelling this object, in 1838, the workmen discovered some urns, and other indications of sepulture, some of which, however, were at the moment destroyed. Lieutenant (now Colonel) Larcom fortunately happening to pass

* Having heard of the discovery of some ancient remains in the locality referred to, an excursion was made by Dr. Todd and myself to the spot the next day (Sir John M'Neill having kindly taken us down upon the then unopened line of railway). I then obtained the foregoing particulars, and also examined the remains; and shortly afterwards succeeded in procuring, through the kindness of Mrs. Newton, this unique specimen for the Academy. See Proceedings, vol. iv. p. 35, for January, 1848, where an engraving of the urn, the full size, is published. See also vol. v. p. 181, for a second notice of this vessel.—W. R. W.

at the moment, rescued the tumulus from further spoliation, and Mr. Drummond, then Secretary to the Lord Lieutenant, invited a deputation from the Royal Irish Academy to visit the spot immediately after the discovery was made, in May, 1838. Within the mound of the tumulus, but at the distance of several yards from the centre, four small sepulchral vases, containing ashes of burned bones, were found enclosed within stone kists. Three of these, Nos. 26, 27, and 28, are in the Academy's collection. The accompanying illustration,



Fig. 130.

made from the original drawing by one of the officers of the Ordnance Survey, and still preserved in the Academy, shows the state of the tomb at the time the examination was undertaken by the Committee of Antiquities, and nearly the state in which it is at present. It consists of an oblong chamber, running nearly north and south, $5\frac{1}{2}$ feet in length, in the clear 20 inches high, and $3\frac{1}{2}$ feet wide; surrounded by seven upright flag stones, upon five of which the massive table or covering-stone rests. This latter is $6\frac{1}{2}$ feet in length, 1 foot thick, and averages $3\frac{1}{2}$ feet in breadth; it exhibits the effects of long-continued water-wearing, and may possibly have been carried up from the bed of the Liffey, which the spot overlooks. Within the chamber "two perfect male human skeletons were found, and also the tops of the femora of another, and a single bone of an animal,

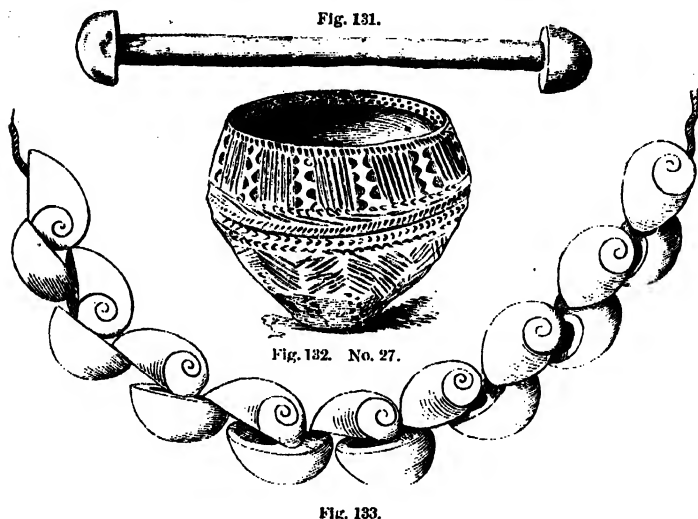
supposed to be that of a dog. The heads of the skeletons rested to the north, and as the inclosure is not of sufficient extent to have permitted the bodies to lie at full length, they must have been bent at the vertebræ or at the lower joints. Immediately under each skull was found collected together a considerable quantity of small shells common on our coasts, known to conchologists by the name of *Nerita littoralis*. On examination, those shells were found to have been rubbed down on the valve with a stone to make a second hole—for the purpose, as it appeared evident, of being strung to form thin necklaces; and a vegetable fibre serving this purpose was also discovered, a portion of which was through the shells. A small fibula of bone and a knife or arrow-head of flint were also found" (see Proceedings, vol. i. pp. 186-90). All these interesting remains, which considerably assisted in forming the nucleus of the present collection of antiquities belonging to the Royal Irish Academy, were—*Presented by Lord Mulgrave, then Lord Lieutenant of Ireland*. The crania and skeletons will be described in their proper place.*

Of the three urns procured from this tumulus, the only one now tolerably perfect is No. 27, Fig. 132. It is also the largest; and if rudeness in design and execution characterizes particular eras, is manifestly the earliest of the set. It is 6 inches high, and in shape occupies a place between the vase and the bowl. The decorations are of the simplest character, and such as might be formed by the rudest tool—the point of a stick or an arrow-head. Those on the lower portion are simple scratches, forming an approach to a zig-zag pattern. The other two imperfect urns, Nos. 26 and 28, placed on either side of this on the fourth shelf, are smaller, and much more highly decorated.

Above this urn, of the natural size, the bone pin is shown

* See the author's description of the skulls found in this tumulus in his "Lecture on the Ethnology of the Ancient Irish," delivered at the College of Physicians, Dublin, in 1844. See also "The Beauties of the Boyne and Blackwater," pp. 212 and 228.

in the accompanying cut, Fig. 131, found along with the shell necklaces, within the interior of the tomb; and a portion of one of the latter, Fig. 133, is also figured. The bone fibula



was probably used for twisting the hair upon. It is remarkable that, while all the objects found in urns bear the marks of fire, the shells and fibula found with the skeletons in this tumulus do not, any more than the skeletons themselves, exhibit the slightest trace of its action.

The general subject of sepulture will be considered at length in the description of the Human Remains, Class VII.; but it may here be stated that both cromlech and urn burial in Ireland are pre-historic.

URNS.—Upon Shelves 2, 3, 4, 5, and 6, and in a portion of the lower Compartment of the first glass-case of the Eastern Gallery, the Sepulchral Urns, thirty in number, have been arranged; besides various fragments which are interesting as exhibiting ornamental characters, in most instances illustrative, if not of their comparative antiquity, at least of the style of art of the period. No. 1, Fig. 124, may be taken, both in size and shape, as one of the

simplest and rudest in the Collection. It was apparently formed by the hand, unaided by the potter's wheel, and is totally devoid of ornamentation. It swells in the middle, and is contracted above and below; is 2 inches high, by $3\frac{1}{2}$ broad at the middle enlargement, and $2\frac{1}{4}$ wide at the mouth. It contains fragments of burned bones,—apparently some of the long bones of the human skeleton. It was found near the ancient city of Athenry, county of Galway, in 1848, and—*Presented by the Hon. Skeffington Daly* (see Proceedings, vol. iv. p. 165). This is the only specimen of a totally undecorated urn in the Museum. No. 2, a rude bowl-shaped urn, very rough on the surface, and slightly decorated all over with a rope-like marking, as if notched with a piece of wood or bone, is $4\frac{3}{8}$ inches high, $5\frac{3}{4}$ wide in the largest part of the bowl, and $4\frac{3}{4}$ in the clear of the opening. The surface is of a reddish-brown colour; but the interior, as shown by the fractured portions, is almost black, and was apparently burned, although not vitrified. Upon the inner surface may be seen a quantity of gravelly matter adhering to it, and burned in. Small fragments of stone and sand may also be seen in the fractures: showing that the material of which it is composed is not what is termed potter's earth, but probably red, sandy clay, the ordinary alluvial surface of the country. This urn was found on the lands of Coolnakilly, parish of Glenealy, county of Wicklow, and was the gift of J. A. Eccles, Esq., to the late Dean Dawson, with whose Collection it was purchased by the Academy. No. 3 is the fragment of a remarkable bowl-shaped urn, decorated all over. It does not appear to have been more than $3\frac{1}{2}$ inches high, but is 5 inches wide across the broadest portion. The ornamentation was performed by some narrow tool pressed obliquely into the soft clay, which instrument must have been hollow, or grooved at the end. The surface is a darker brown than the foregoing, and the inside smooth. This urn was discovered in what has been termed, in the description sent with it, a subterraneous cavern, approached by a narrow passage, beside the moat of Dunagore, situated within two miles of the town of Antrim. It is also said that, in connexion with it, were found a number of flint arrow-heads, and a stone celt, &c. No. 4, a small cinerary urn of more graceful form than any of the foregoing, is very perfect. It stands on a flat foot or bottom, is

CLASS II.—EARTHEN MATERIALS: MORTUARY URNS.

3½ inches high, 4½ broad in the centre, and 3½ in the clear of the mouth. It is much decorated externally,—the ornamentation being divided into compartments by raised lines, between which we find the zig-zag character, such as may be seen on some of the most ancient stone monuments belonging to Pagan times, in Ireland, and also on Irish antique gold ornaments. A quantity of sand and minute pebbles is mixed with the reddish clay of which this urn is composed, and is likewise adherent in several places to its surface. It was found at Crowenstown, county of Westmeath, and—*Presented by the Rev. Joseph Fitzgerald, P. P. of Rahau.* No. 5 is a very small urn, much baked, and highly decorated all over; the bottom, or foot, 2½ inches across, is slightly spread; it stands 3½ inches high, is 4 wide across the bowl, and 3 in the span of the opening. The decoration consists of circular lines dividing it into five compartments; and the irregularity of these lines leads us to believe that they were not formed upon a wheel. Three of the compartments consist of rings presenting wreath-like markings, the two others have the ornaments embossed perpendicularly. This beautiful specimen of ancient Irish pottery was found in an inverted position, covering two small human bones—joints of a finger and a toe—in a kistvaen, or small stone grave, formed of six flags, 18 inches long, 7 high, and 10 broad, about two feet beneath the surface, in a solitary part of the mountain, parish of Kilbride, county Wicklow. This interesting relic, together with the foregoing description, was—*Presented by the Rev. Dr. Walsh* in 1839 (see *Proceedings*, vol. i. p. 296). No. 6 is an unusual-shaped urn, globular at the bottom like No. 3, and swelling less in the centre than any of the foregoing; it is 5 inches high, 5½ across the broadest part of the bowl, and 4 in the clear of the opening. All the external surface, including the bottom, is decorated. The ornaments are in five bands, two of which are rings, and three upright markings, divided into spaces by such impressions as might be made by the finger-nail on the soft clay. This urn, which contains fragments of unburned bones, a dorsal vertebra, portions of the upper jaw and teeth of the human subject, together with a fragment of one of the long bones of some small mammal, was—*Presented by F. M. Jennings, Esq.* No. 7 is an imperfect urn, wider at the mouth than any of the foregoing; 4 inches high, 6 broad, and 5 in the clear of the opening. It is highly decorated with elevated

ridges, presenting precisely the same pattern as some of the stones in the ancient Pagan monument of Newgrange, particularly that above the entrance.* The interstices of these interlacings are embossed with a net-like pattern, to produce which a stamp of some description was used. It contains fragments of human bones.

No. 8 commences a series of bowl-shaped urns, very perfect, and highly ornamented; it is $4\frac{1}{4}$ inches high, $5\frac{1}{2}$ wide, and 4 across the opening. The decorations with which it is covered divide it into six spaces, the horizontal or circular lines being so irregular that they could not have been made while the urn was turning on a wheel. The second and fifth spaces are ornamented by pectinated indentations running obliquely, whereas in the third and sixth these decorations are upright; the bottom is also decorated. It, together with No. 19, was found along with some incinerated bones, charred wood, and a quantity of the remains of some of the lower domestic animals, oxen, swine, cats, dogs, sheep, and also those of fowl, at Donaghane, county of Donegal, in 1846, in a cairn contained within a circle of large stones measuring 70 yards in circumference; in laying open which, for procuring building materials, numerous sepulchral cells were discovered. The roofs of these chambers were formed on the principle of the beehive dome, by overlapping flags; and the vertical stones which formed the sides were covered with carvings cut into the flag, consisting of volutes, circles, spires, and zig-zag characters, such as are to be found upon those great sepulchral monuments on the banks of the Boyne, particularly Newgrange and Dowth (see Mr. Wilde's communication in Proceedings, vol. iii. p. 260). This urn was—*Presented by A. R. Nugent, Esq.*, to whom the Academy is indebted for many donations. No. 9, one of the most perfect urns of the globular shape in the Collection, is $4\frac{1}{4}$ inches high, 6 wide, and $4\frac{1}{2}$ across the mouth. The decorations are more regular than on any of the foregoing, and divide the vessel into six spaces, with circular and horizontal indentations, and short upright lines. These lines, both horizontal and perpendicular, seem, at first view, simple indentations, but on a close inspection they appear to have been

* See the cut in the Author's "Beauties of the Boyne," p. 193.

formed by some notched or serrated tool of the wheel character. This urn was found in an ancient grave at Kilmurry, near Thomastown, county of Kilkenny, and presented to Dean Dawson by Thomas Bushe, Esq. That locality abounds with ancient sepulchres (see "Transactions of the Kilkenny Archæological Society," vol. i. p. 27). No. 10 is somewhat smaller, and also thinner and lighter than any of the previously examined specimens, of the globular form; it is $3\frac{1}{2}$ inches high, $5\frac{1}{2}$ across the widest portion, and $4\frac{1}{2}$ in the mouth or opening. The decorations are more elaborate than those on No. 9, and resemble more those on No. 6. This vessel may have been at first formed on a wheel, and afterwards ornamented by hand. The decorations cover the bottom, and also pass, for a short distance, within the edge of the lip. Most of the side ornamentations must have been formed by a special tool, or stamp. Within it may be seen the fragment of a larger urn found in the same locality, and decorated with zig-zag lines, showing a ruder, and perhaps earlier form of art. These urns were found in June, 1848, on the townland of Kiltalown, near the top of the ridge of the Hill of Tallaght, within a few miles of Dublin—a locality long memorable in Irish history, and deriving its name, *Tamh-leacht*, "the stone of the grave of the people who died of the plague," from one of the earliest recorded pestilences which occurred in Ireland. It is related in our histories, that Partholon, one of the first colonizers of this island, contracted a great pestilence at Ben Edar (the Hill of Howth), of which nine thousand of his people died, and were buried at Tallaght.* Many similar urns, contained in small stone chambers, have been discovered in the same locality; some very recently. No. 11 is similar to the last both in size and decoration, but not ornamented on the bottom; it is about 4 inches high, $5\frac{1}{2}$ wide, and $4\frac{3}{4}$ across the mouth. It was found in a stone chamber at Ballagradone, county of Sligo, and has been partially incrustated with carbonate of lime (possibly the dripping of stalactites), a material which has done good service in preserving cinerary urns. No. 12 is a globular urn, differing in decoration from the three former, being marked by two rows of lozenge-shaped devices, apparently

* See all the authorities bearing on this first great Irish pestilence in the Author's Report in the Tables of Deaths in the Irish Census of 1851, Part v. vol. i. p. 41.

formed by the same tool, a zig-zag intervening; it is also decorated round the lip. No. 13 is the most beautiful of this class yet examined, being as thin and light as modern pottery; averaging, in thickness, about $\frac{1}{4}$ th of an inch. It is formed out of much finer and better clay than any of the foregoing, is perfectly smooth on the interior, evinces great perfection in the ceramic art, and is the nearest approach to the Roman terra cotta of any urn in the Collection. It is $3\frac{3}{4}$ inches high, 6 across the widest part, and $4\frac{3}{4}$ in the clear of the mouth, and is beautifully decorated all over the external surface by upright and horizontal markings, the former presenting a raised wavy scroll, and the three latter the usual decorated indentations, as if made by a wheel, the type of which may be seen in specimen, No. 9. The edge of the mouth, as well as the margin of the bottom, is decorated by a raised wavy line. It was found in Killinagh parish, county of Cavan, in 1822, in a stone chamber, buried about 2 feet under ground, and when found was nearly full of ashes; the place about it bore evident marks of fire. It was, with a number of other valuable antiquities—*Presented by Lord Farnham* (see Proceedings, vol. iii. p. 530). No. 14 is a pendant to the foregoing, but of a much smaller size. It is the most perfect of its kind both in shape and decoration yet discovered in Europe, and the only one of its exact shape recorded in the British Isles (see Fig. 129). It is 2 inches high, $3\frac{3}{4}$ across the outer margin of the lip, and $2\frac{3}{4}$ in the clear of the mouth. The widest part of the bowl is $3\frac{3}{4}$ inches across, and it stands on the edge of a cup-like bottom, $\frac{1}{2}$ an inch broad; the handle is $\frac{3}{4}$ ths of an inch in extent at its points of attachment. For the details of this urn, and the circumstances under which it was found, see p. 180.

No. 15 is a globular urn, 4 inches high, $5\frac{1}{2}$ broad, and measuring $4\frac{1}{2}$ across the mouth. It is decorated with an angular-shaped indentations between circular lines, the marks appearing as if made by the point of an arrow; it has been coated with carbonate of lime, probably the dripping from stalactites; it was found in a grave at Kilmurry, and given by P. Crampton, Esq., to Dean Dawson. No. 16 is another bowl-urn, rather contracted at the foot, $4\frac{1}{2}$ inches high, $5\frac{1}{2}$ broad, and $4\frac{1}{2}$ wide across the mouth; it is highly decorated with apparently a stamped pattern; the ornamentation extends over the bottom, and also passes into the lip. It

was found at Cooen, barony of Fassidin, county of Kilkenny. No. 17, a bowl-shaped urn, $4\frac{1}{2}$ inches high, $5\frac{3}{4}$ broad, and $4\frac{1}{2}$ wide at the mouth, slightly decorated with circular lines, between which may be observed triangular indentations, as if marked with a flint-arrow, but presenting upon a closer inspection all the characters of a stamp especially devised for the purpose. This vessel was procured from a grave in Kilmurry, county of Kilkenny, and given to Dean Dawson by T. Duffy, Esq. No. 18 is a small bowl-shaped urn, contracted at the foot, 4 inches high, $5\frac{1}{2}$ broad, and $4\frac{1}{4}$ across the opening; it is decorated with a number of upright and oblique lines, passing between the rings or circles; but upon the whole the pattern is rather ruder than the foregoing, and resembles that upon No. 5.

The remaining perfect urns in the case do not present the globular form, but partake more of the elongated vase-shape. The series commences with No. 19, the rudest of the set, which is $5\frac{1}{2}$ inches high, the same in breadth near the top, is $4\frac{1}{4}$ inches wide at the mouth, and stands on an outspread foot: the material of which it is composed is a red clay, mixed with a quantity of dark-coloured gravel; the style of ornament is very simple, and consists of two sets of circular lines, with oblique and upright lines between. These marks were not formed with any serrated tool, such as that used in some of the former specimens, but were simply scratched upon the soft clay with probably a piece of hard wood or bone. It was found at Donoghane, with No. 8, full of small fragments of incinerated bones, apparently human, and a quantity of charcoal, and was—*Presented by A. R. Nugent, Esq.* (see Proceedings, vol. iii. p. 260). No. 20 belongs to the same variety as the foregoing, but is more globular, and not so tall; it is $4\frac{3}{4}$ inches high, 6 broad, and $4\frac{3}{4}$ wide in the mouth; has five raised bars above the middle, and is indented all over with a serrated tool, like some of the oldest specimens already described; it is also slightly tooled over the lip. It was found at Rathbarn, five miles west of Collooney, county of Sligo, in the summit of an ancient rath, "in a square coffer of flagstones, placed on edge, and contained burned bones and the small mica-slate disc" which stands in front of it on the shelf. It was—*Presented by Archdeacon Verschoyle*, who also afforded the foregoing particulars. No. 21 is a

very remarkable urn (see Fig. 125) of the vase-shape, $5\frac{1}{2}$ inches high, 6 broad at the widest part near the top, and $4\frac{1}{2}$ across the opening; it stands upon a base of only 3 inches in diameter. At first view it appears to be formed out of a piece of micaceous sandstone; tooled all over; but a closer inspection shows that it is composed of a sandy clay, sprinkled with minute particles of quartz and mica. It does not appear to have been burned, but has been either baked or sun-dried to a degree of excessive hardness. The ornamentations cut into it are much lighter in colour, and less smooth than the remainder of the surface, and appear to have been cut upon it with some sharp gouge-like tool, after the vessel was baked; its ornaments are of four kinds: circular lines, a middle band of zig-zag pattern, a number of cut-out points, giving it the appearance of punched rustic work, and a herring-bone pattern which passes a considerable way within the lip, which is more everted than in any of the preceding specimens except No. 14. It was found on the lands of Lugnagroagh, barony of Talbotstown, county of Wicklow. No. 22 is of the same type as the foregoing, but broader in proportion to its height, being $5\frac{1}{2}$ inches high, $6\frac{1}{2}$ broad, and 5 wide in the mouth; it is remarkably rough on the surface, and so covered with carbonate of lime that in many places the ornamentation is obscured. Sufficient, however, remains clear to show the pattern, which consists in a horizontal zig-zag and herring-bone line, passing into the lip. The lime has formed a perfect coating to the interior. It contains a quantity of small fresh-water shells, particularly *Planorbis corneus*, *P. marginatus*, *Lymnea stagnalis*, and also *Littorina littoralis*, a marine species. No. 23 is a large but imperfect urn, of the vase-shape, $8\frac{1}{2}$ inches high, and 8 wide; it is formed of very rough material, containing a quantity of comparatively coarse gravel; the lower part is plain, but the upper decorated with a rope-like pattern, a raised hoop passing between. It was found in the great cemetery of the Hill of Rath, and—*Presented by J. Huband Smith, Esq.* No. 24 is a rude vase-shaped urn, which became crooked in the drying; it is composed of very red clay, $6\frac{1}{2}$ inches high, $6\frac{1}{2}$ broad, and $4\frac{1}{2}$ wide; is decorated with circular lines, a network of lozenge-marks below, and a dotted indentation above; the lip is likewise decorated. No. 25 is a very beautiful specimen (see Fig. 126), and more elaborately decorated than any of the foregoing of the

vase-shaped variety; it is $6\frac{1}{2}$ inches high, 7 wide in the middle, and 5 across the mouth; is of very dark material, and so smooth as to appear glazed. The raised pattern worked upon it consists of three sets of leaf-like marks, apparently made by a stamp, but finished by hand. The lip is very delicately impressed with lozenge-marks, passing horizontally for some distance within the interior.

Nos. 26, 27, and 28, are the three urns discovered in the small kists of the tumulus in the Phoenix Park, referred to at pages 180 and 183; all more or less imperfect, but the first and third more so than that in the centre, which is engraved as Fig. 132. No. 26 is a very beautiful specimen of the globular form, exhibiting a high degree of art, and great beauty of shape and decoration; it is $3\frac{3}{4}$ inches high, and measured, when perfect, about 4 inches broad; it bears all the appearance of having been formed on a wheel, but must have been finished by hand, as shown by the bottom decoration. A series of plain bands at different elevations divide the vessel into spaces filled with wave-line or rope ornaments. No. 27 is of a medium shape, between the vase and the bowl, having a narrow undecorated foot, $2\frac{3}{4}$ in diameter; it is 6 inches high, 7 wide in the middle, and 5 in the opening; externally it is of a light gray colour, but exhibits all the marks of firing upon the interior, to which some of the charcoal still adheres. The decorations are of the rudest kind, consisting at the lowest portion of a number of dots, apparently made with a flint point upon the soft clay, and above these a band of scratches making a zig-zag pattern. A double fillet surrounds the widest portion of the urn; above, the ornament consists of alternate spaces of nearly perpendicular lines and arrow-pointed indentations. The lip is likewise decorated, apparently by a bit of flint or bone. No. 28 is the lower portion of an urn, probably somewhat higher, though not so globular as the foregoing; it stands on an undecorated base 3 inches wide, and was, when perfect, from 7 to 8 inches high; the decorations are of the rudest character, consisting of zig-zag lines with horizontal scratches, so as to form in the centre a chevron pattern; it and the foregoing are much thicker, and also coarser material than No. 26; but neither exhibit the same amount of firing upon the inside; these three, as already stated, were—*Presented by the Lord Lieutenant, Lord Mulgrave.*

In a small case, placed beside No. 26, may be seen a quantity of burnt bones, a portion of the human remains originally found in in one of these urns; and beside No. 28 may be seen a collection of modern shells of the same species as those which form the antique necklace. Around these three urns are festooned the necklaces described at page 182. The larger of them consists of 274, and the smaller, of 195 shells of the *Nerita litoralis*, and so selected that they taper from the centre to the extremities.

In front of No. 27 is the bone fibula, $2\frac{1}{2}$ inches long, and also the flint-flake, $1\frac{1}{2}$ in length, exhibiting the secondary process or manufacture of such implements described at page 13. The necklaces, the bone, and the flint which bear no marks of fire, were not found, it must be remembered, in the kists with the urns, but along with the two human skeletons discovered in the central chamber of the cromlech. No. 29 is the underpart of a very large, rudely formed urn, totally undecorated; what remains is about 6 inches high, but it was probably, when perfect, double that size; it is 9 inches across, and composed of a red friable clay, without any mixture of gravel, the cause, in all probability, of its fragility. No. 30, in the lower Compartment, is the upper rim of a very large urn, partially restored; it is $13\frac{1}{4}$ inches across the mouth, and probably stood 14 or 15 inches high; the decorations are of the very rudest style, but still showing the zig-zag, chevron, and herring-bone character; the lip, which is slightly everted, is also ornamented. No. 31 is the largest urn in the collection, and possibly the largest yet discovered in Ireland; it is 16 inches high, and 15 across the opening, narrowing to 6 inches across the bottom, and is divided externally into three compartments by two bands; the upper decorated with short lines, forming a zig-zag pattern, and the lower by a network scratched into the clay when soft. It stands on an ancient iron tripod discovered in a bog. This large specimen of mortuary urn was found in an ancient cemetery at the Hill of Rath, county of Louth, near Drogheda; together with "from 150 to 200 urns of unbaked clay, of various sizes, almost all placed in an inverted position, and covering, each of them, a considerable quantity of human bones. The Rath appears to have occupied the declivity of a hill sloping gently to the west, and was originally enclosed by a breast-work of earth of inconsiderable elevation, but which, accord-

ing to report, may have once inclosed a space of five or six acres." The surface soil having been removed, the urns were discovered at a depth of from four to five feet beneath the original surface, resting upon the till or gravelly subsoil. In that under consideration, which was—*Presented by Mr. Kelly*—were found those stone, bone, and bronze articles in Rail-case C, from No. 19 to 25, already described at p. 150; and also the flint article, No. 1275, in Rail-case A (see Mr. J. Huband Smith's communication upon this subject in *Proceedings of the Academy*, vol. i. p. 259).

Nos. 32 to 44 are fragments of different urns, showing great variety in styles of ornamentation, but principally those of the earliest and rudest forms. Nos. 33, 36, and 42, all present the same class of decoration, being simply scratches or indentations, impressed upon the clay while yet soft; they are of the very rudest description. No. 32, which is formed of apparently a very soft material, and overburned, has the lower portions plain, and the upper roughly indented with a rude tool, between which portions a projecting ridge encircled the widest part of the vessel. No. 33 consists of the fragments of a rudely formed urn, scratched roughly all over. It and Nos. 36 and 42 were found in a stone chamber in the townland of Ballynahatty, parish of Drumbo, county of Down, in a field adjoining the Giant's Ring, and were—*Presented by Lord Dungannon* (see *Proceedings*, vol. vi. p. 300). The last specimen is nearly 1 inch thick. No. 34 consists of a set of fragments of a rude thick urn, roughly tooled, but exhibiting greater irregularity of pattern than the foregoing. No. 35 is the fragment of the lip of a very hard-baked, blackish urn, ornamented at the edge, but plain at the side; it resembles No. 25, and in material is composed of hard clay, mixed with a quantity of white sand. No. 36 is the fragment of a large and rudely decorated urn, and No. 37, a fragment much decorated. No. 38, several fragments of a much burned urn of small size; the material very sandy. No. 39, fragments of a large thick urn, covered with straight diagonal lines, not unlike No. 30. No. 40, fragments of a large urn, quite undecorated, except by a slight ornament on the lip, and a ridge which divided the upper from the middle third. No. 41 consists of fragments of a similar description of urn, with the same kind of ridge, but decorated with a zig-zag line round the inside of the lip. No. 42, fragments

CATALOGUE OF THE MUSEUM.

of a large globular urn, of the rudest material, and impressed all over the surface as if with a piece of slate; it was found in a tomb along with Nos. 32 and 36. No. 43, the fragments of an urn, the lip ornamented, but no other decoration apparent. No. 44, the fragments of a small bowl-shaped urn, highly decorated, and not unlike No. 26. This urn was found four feet beneath the base of a tumulus in the fort of Croghan Erin, in the parish of Kiltale, barony of Lower Decies, county of Meath, and with it was said to have been "found a thin piece of either brass or copper, about 18 inches long, and 3 wide, which was figured or carved round its edges, but this has not been recovered or traced." See Proceedings, vol. iv. p. 338. Within a cromlech which occupied the centre of the tumulus, "with the earth packed round it and over it, a human skeleton was discovered, in a perpendicular position, the skull being immediately below the [covering] flag, and the lower extremities a little raised above the level of the base of the tumulus; in the vicinity the spear-heads were taken up." These, which are attached to the card containing the fragments of the urn, consist of a bronze sword-blade of the scythe character, broad at the base, with holes for attaching it to a metal stem or handle, of which there are several fine specimens to be seen among the metal weapons in Class V. It is $9\frac{1}{2}$ inches long, and $2\frac{3}{4}$ broad at the base, and is decorated on the sides totally different from any other specimen in the Academy's collection. It has been greatly corroded, and appears to have suffered from the action of fire. The second metal article is an iron spear-head, $6\frac{1}{2}$ inches in length, with an unusually long socket. All these articles were—*Presented by S. Searanke, Esq., C. E.* Without a careful examination of the circumstances under which these discoveries were made, it might at first sight appear that the cinerary urn and the metal weapons were found in connexion with the human skeleton, but it is manifest, from Mr. Searanke's communication, that such is not the fact. The urn does not appear to have been in any way connected with the cromlech, except by contiguity, like those found in the Phoenix Park tumulus, and the weapons were merely found in the "vicinity."

One glass urn, at least, has been found in Ireland.

CHINESE SEALS.—Cubical portions of white porcelain, about $\frac{5}{8}$ ths of an inch upon each side of the square, surmounted by the figure of an ape, and embossed upon the under surface with characters which are proved to be a very ancient form of Chinese writing, have been found in so many localities in Ireland, and in such numbers, as to warrant their being assigned a place in any collection of Irish antiquities, although the mode or the period in which they were brought to this country have not been explained by antiquaries. More than eighty years have elapsed since the first of these porcelain seals was found in this country, and so early as 1793, an engraving of one was published in the "*Anthologia Hibernica*," vol. i. p. 284. Since then, one hundred, at least, must have been discovered, and the impressions of sixty-three have been published. They have been found both in bogs and uplands, in the beds of rivers, under the roots of large trees, beside burial-grounds, and in the neighbourhood of modern human habitations; in fact, in all localities where they might have been dropped accidentally; but no instance is recorded of one being discovered under circumstances which could lead to the belief that they were in any way connected with the history of the country, or with the habits, either social or commercial, of its people. Still, the fact of so many having been found in such different situations is remarkable. Mr. J. Huband Smith first drew public attention to these seals in 1839. See his Paper, published in the *Proceedings*, vol. i. p. 381. Since then, Mr. E. Getty, of Belfast, published a memoir upon the subject, illustrated with engravings, and impressions of sixty-three of them. The mottoes upon these Chinese seals found in Ireland have been all read by competent scholars,* and many of them are highly poetical, such as "Pure is the breeze on the stream," "Heaven and water

* See also Chambers' *Journal*, No. 414, New Series, for December 6, 1851, p. 364. See also "Notices of Chinese Seals found in Ireland," by Edmund Getty, *M.R.I.A.*, p. 14. Dublin: 1850. Seal No. 4 is also No. 4 in Mr. Getty's Plate I.

are of the same colour," "The arrow returns to him who trusts to himself," "A friend, like the Mei flower," &c. In Rail-case D, numbered from 1 to 5, will be found five of these Chinese seals, from the last two of which the accompanying illustrations, the natural size, have been drawn. The inscription on No. 4 has been variously



Fig. 134. No. 4.

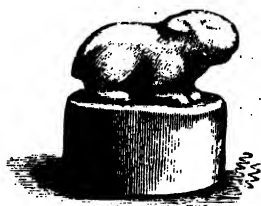
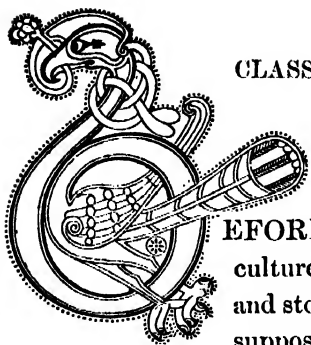


Fig. 135. No. 5.

read by different translators. Mr. Gutzlaff's translation is—"To have the same expansive heart as heaven and earth." No. 5 is a unique specimen, being oval in shape, and ornamented by the figure of an animal resembling a guinea-pig. It was found at Rathkeale, county of Limerick, and was—*Presented by the Rev. Dr. Todil, President.* The inscription has not yet been read. Besides these seals, a collection of twenty-two impressions of other Chinese seals found in Ireland may be seen in this case. It is said that no porcelain seals of a similar shape and size can now be procured in China.

No. 1 was found near Kilmainham, county of Dublin, and—*Presented by Mr. Thomas Young.* No. 2 was—*Presented by Miss Murphy.* No. 3 was turned up in the year 1832 in a ploughed field near Borrisokane, county of Tipperary. This, and No. 4, formerly in possession of R. Fannin, Esq., were procured with the collection of Dean Dawson. For No. 5 see the foregoing.



CLASS III.—VEGETABLE MATERIALS.

ORDER I.—WOOD.

EASTERN GALLERY.—CASE II.

BEFORE man had attained that amount of culture which enabled him to convert flint and stone into weapons and tools, we must suppose that he availed himself of the timber of the forest (when so located) to form a club as an implement of protection or offence, to make a wattle for his hut, and to construct from the slender twig a snare wherewith to entrap his prey. But although it is certain that the use of wood was thus, in the very infancy of the human race, resorted to, either alone, or in connexion with the flint and stone implements described in the first section, it could not be expected, from its decaying nature, that articles formed from vegetable material could endure, in a climate such as ours, for more than a few hundred years, except when preserved in bog. With the question respecting man's early state in his original habitat, we do not deal; in these examinations we take him as he first appears to us (judged by his remains) in our Western Islands,—uncultured and uncivilized, such as we find him in other portions of the world at the present day.

Coeval with, and perhaps antecedent to the first colonization of the island, but prior to the chief bog deposits, Ireland must have been, from the nature of its temperature, an Emerald Isle,—green, fruitful, and abounding in vegetation. History and tradition, confirmed by the existing remains of trees and plants conserved beneath our peat mosses, tell us that it was well wooded. What may have been the order of

succession in its forest trees botanists have not decided ; but far down beneath the surface of our oldest and deepest bogs we find traces of the hazel, and trees of the oak, the yew, and the pine, of stupendous size, and bearing evidence of being the growth, perhaps, of centuries, either broken off in the stem, or uprooted and prostrated by the tempests or the floods which swept over these localities, before the mosses, heaths, rushes, and grasses had collected round them, and, in lapse of years, had formed, by compression, what is denominated Turf. An examination of the localities in which these and other trees are found, shows us that many of the places now covered by partially decayed vegetable matter were once dry and studded with forest trees, proving incontestably that several of our bogs are of comparatively recent formation. This assertion is further confirmed by our annals, in which we find notices of floods and storms that prostrated woods of gigantic growth. Hazel nuts, acorns, beech-mast, and crab apples, are frequently referred to in our earliest annals, and leave no doubt as to the great abundance of the trees which produced them. But even within the period of modern history—say three hundred years—we have faithful records of the existence of extensive forests. A few indigenous woods remain ; and, besides those trees which may be considered of imported origin, we find there the oak, birch, hazel, yew, ash, and holly, the thorn, apple, sloe, and mountain ash, all of native growth ; the fir alone having, it is generally believed, left few representatives, and in most localities none. Whether the alder and the different varieties of willow, popularly known as sallows, so widely distributed over the face of the country, particularly around the habitations of man, and also the elder, are of the early native stock, is still questionable.

While the substance of the bog mass is composed of numerous species of moss, chiefly the *spaghnum*, with several varieties of rushes, grasses, ferns, and heaths, there have been

frequently found, at from four to five feet above the gravel, a strata of broken branches of birch, beech, and hazel, although no trunks of such of any great size have yet been discovered; but in rare instances those of elm and alder have been found. It is remarkable that, while the roots of several other kinds of bog timber are frequently found turned on the side, those of the fir are usually discovered in a standing position, with a few feet of their trunks remaining attached to them. Several of these roots are in such positions as to show that they had grown on previously formed bog, whereas it is said the trunks of the oak and yew, which are found scattered near the verge of the bogs, rest "mostly on clay or gravel, seldom with a foot of peat between the trunk and the gravel." These trees, "being almost invariably attached to their roots, form a striking contrast with the fir trees."* Three varieties of pine, distinguished by their cones, have been discovered, *Pinus sylvestris*, *P. pinea*, and *P. pinaster*; a few successors of the latter are said to exist in the neighbourhood of Tarbert, county of Kerry; and some fine specimens of native *Pinus sylvestris*, not planted by human hand, may still be seen at Coolnamuck, on a hill-side near Carrick-on-Suir, county of Waterford.

Although the articles formed of wood in the Academy's Collection are, with some exceptions, of recent origin, compared with the antiquity of most of the objects in the two foregoing sections, they are, nevertheless, of great interest,

* See Mr. Aher's Report, in the Appendix to the "Third Report of the Commissioners for inquiring into the Nature and Extent of Bogs in Ireland," p. 64. See also Mackay's "Flora Hibernica."

One of the most interesting discoveries connected with the ancient forests of Ireland made of late years is that by Dr. Charles Farran, the well-known conchologist. Upon the Waterford coast, at Clonea, near Dungarvan, he found, after one of the highest tides remembered in this county, the remains of an ancient pine forest, miles in length, and which is ordinarily covered with many fathoms of water; the sea has very evidently encroached on the land at that point, probably by the subsidence of the latter. In the roots of the pines which formed this forest he found myriads of *Teredo Norvegica*, hitherto unknown in Ireland. An account of this discovery was laid before the Dublin Natural History Society.

and throw much light upon the domestic habits and manner of life of the Irish, from the tenth to the sixteenth or seventeenth centuries. In material, the implements in this compartment afford specimens of oak, in the remains of cran-noge timbers, boats and paddles, mills, forks and spades; of yew and sycamore, in cups and turners' work; of willow, beech, and walnut, in bowls, large single-piece vessels, and mothers; of fir, in horse-trappings; and so likewise of beech, sycamore, ash, and elm, according to their various applications.

All the articles of wood or other vegetable material have been arranged in the Central Glass-case of the Eastern Gallery, and in the adjoining Rail-cases E and F.

No wooden weapons or tools, of any great antiquity, have come down to the present time; as already stated, the bows, arrow-shafts, and the handles of spears, axes, and hatchets, not only of the early Stone period, but of the days when metal was in use, must have perished, while the implements to which they were attached remained.*

The only wooden articles supposed to belong to the weapon class are a number of small pieces of deal and yew, broad in the middle, sharpened at each end, and varying in size from $2\frac{1}{2}$ to 12 inches in length. They were presented by Mr. Hitchcock, with the following note, which is printed in the Proceedings, vol. iv. p. 272:—"A collection of skewer-like pieces of wood, called 'arrows' by the peasantry, found in a bog on the top of the mountain of Coum-an-are, barony of Corkaguiny, county of Kerry, scattered about the broken and weather-beaten parts of the bog for about a quarter of a

* As shown by some of the Continental investigations, a pointed flint-flake was fixed into the hollow of a piece of bone or horn, which was perforated by a cross aperture, into which a slender wooden handle was inserted. Such an implement would make an admirable weapon or tool. Lord Talbot de Malahide possesses a dagger-shaped flint-flake with a handle of moss wrapped round it. See Proceedings, vol. v. p. 176. In a few instances portions of the wooden handles still remain in the sockets of spears and arrow-heads; and in two cases the original handles have been found with stone and bronze celts.

mile all around. There is a tradition current in the neighbourhood, of a battle having been fought near the place where the arrows were discovered." The collection consists of 228 pieces, some of which were found three feet below the present surface; they are, however, as likely to have been used in marking out land as for any other object. If landmarks, they come under the class of Food implements. The collection will be found attached to the under portion of the first Shelf in the third and fourth Compartments of the Glass-case. A similar wooden spike was found in the Dunshaughlin crane (see Rail-case E).

SPECIES III.—FOOD IMPLEMENTS.

JUDGING by analogy, it may well be supposed that the flint arrow or spear was in Ireland, as elsewhere, employed in killing fish; but as neither cetaceous nor amphibious animals frequent the shores or pass into the estuaries of this island as frequently as in more northern latitudes, the harpoon was less in use, and therefore we do not, as yet, possess any remains of that implement which can be referred to a remote period. That the ancient Celts were acquainted with the use of the net, as well as the fishing-line, is probable; but no proof exists wherewith to deny or affirm the proposition; neither are we aware of what vegetable fibre then known in Ireland such nets could be constructed. Fishing-rods must have been very early in use.

BOATS AND PADDLES.—Until within the last few weeks, the Royal Irish Academy did not possess a specimen of an ancient Irish boat, although several have been discovered of recent years both in the excavations made by the Board of Works and in drainages undertaken by individuals. An application having been made by the Council of the Academy to the Royal Dublin Society, that body has deposited all the Irish antiquities which it possessed in the Academy's Museum,

and, among other articles, three ancient boats, which are now placed in the crypt beneath the Museum and Library, where it is intended to arrange all such large articles, and also models of crosses, sculptured figures, &c. &c.

Little attention has been paid to the subject of the early naval architecture of this country. So far as we yet know, two kinds of boats appear to have been in use in very early times in the British Isles—the canoe and the curragh,—the one formed out of a single piece of wood, the other composed of wicker-work, covered with hide. No ancient specimen of the curragh could, however, have come down to modern times. The single-piece canoe is generally formed of oak, and may be divided into three varieties, viz., a small trough-shaped one, square at the ends, from 8 to 12 feet long, round at the bottom, and having projecting handles at either extremity, apparently for the purpose of transporting it from place to place.* Such a boat could be used either in fishing or as a means of transport upon the inland lakes and rivers. This, in common with the two other varieties, is very shallow, so that those who used it must have sat flat upon the bottom, and progressed themselves by means of light paddles,—probably one used in either hand; this is further confirmed by the total absence of all appearance of row-locks. The second variety generally averages 20 feet in length, and about 2 in breadth, is flat-bottomed, round at the prow, and nearly square at the stern. In a specimen of this description of boat, deposited by the Royal Dublin Society in the Academy's Museum, the structure is strengthened by three portions of in-timber, resembling knees, each 2 inches thick, and 4 broad, carved out of the original piece, two near the stem and one at the stern. This very ancient boat, Fig. 136, on the opposite page, measures 22 feet in length, and $2\frac{1}{2}$ feet broad in the middle; the depth of the interior of the side being 11 inches. The stem

* An example of this form of canoe, found in the county of Monaghan, is figured in Mr. Shirley's "Account of the Territory of Farney."

is round and turned up, as shown in the cut; and the stem was formed of a separate piece let into a groove, 2 inches wide, and within a few inches of the extremity of the vessel. When found, the stern-piece was *in situ*, and caulked with bark, and



Fig. 136. No. 1.

the whole canoe was much more perfect than it is at present. It was found in a bog at Cahore, on the coast of Wexford, by John George, Esq., who presented it to the Royal Dublin Society. The bog or marsh in which it was found extends for about four miles between the chain of high sandbanks on the shore and the upland country, but was liable to inundations of both sea and fresh water. In forming a canal to drain the marsh, this boat was discovered twelve feet below the surface, and with it a small bowl for baling, and also two rollers, apparently for getting the canoe to the sea. The oak tree from which this boat was carved must have been, at least, 4 feet across, and from 30 to 40 feet long in the stem.*



Fig. 137. No. 2.

The third variety of ancient Irish canoe is sharp at both ends, as shown in the accompanying cut from another specimen, also deposited in the Museum of the Academy by the Royal Dublin Society. It is lighter, much narrower, and

* The author is indebted to Mr. George, on whose property it was discovered, for a lengthened description of this boat. From long exposure to the atmosphere it has split in several places, and considerably altered in form since it was first taken up. It should be known that all wooden vessels found in bogs or other moist places alter very much, and are apt to split on becoming dry; they should, therefore, be hooped or corded immediately, so as to preserve as much as possible of the original form when dry.

also thinner than the foregoing. It is 21 feet 3 inches long, 12 inches broad, and 8 deep on the inside. It has three knees, or raised ledges, cut out of the original block of oak, which may have been originally much higher; they do not appear to have been used as seats, for which they were quite too narrow; if they served any other use besides strengthening the sides, it was for those who paddled the canoe to place either the back or feet against. This boat is quite flat at the bottom.

Of this third variety is the long, narrow canoe, sharp at one end and square at the other, and, although formed out of a single piece of oak, much resembling a modern life-boat, also deposited by the Royal Dublin Society in the Academy's Museum; it is 20 feet long, and 22 inches broad, and has a square aperture cut out of each side, about the centre, either for adjusting to it some description of row-lock, or a seat. It has a round bottom, is slightly raised at stem and stern; and is evidently the most modern of the three. A single-piece canoe has been discovered either upon or in the vicinity of all the crannoges which have been carefully examined. They have also been found in bogs, and in the beds of rivers, as the Boyne, the Brosna, and the Bann, &c. Ware says that single-piece canoes were in use on some rivers in Ireland in his time. The curragh or coracle is still employed: upon the Boyne it is formed of wicker-work, covered with hide; and in Aran the framework is formed of light timber, fastened together with great ingenuity, and covered with canvas.

The Academy possesses four paddles, the largest of which,

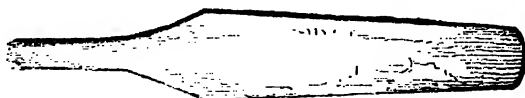


Fig. 138. No. 3.

No. 3, represented in the accompanying cut, is 2 feet 7 inches in length, and $5\frac{1}{2}$ inches broad in the blade, but only half an inch thick. It and each of the others are imperfect in the

handles, having been broken off in the same places, so that we cannot now tell what the original length was; but, from their slender form, they were evidently employed in propelling some very light craft, and used single-handed. This and No. 4, which is 2 feet 2 inches long, by 5 inches across the blade, were found at Toome bar, on the Lower Bann, and were, with No. 2—*Presented, through W. T. Mulvany, Esq., by the Board of Works.* No. 2, somewhat smaller than the others, was found at Kiltubbrid Castle, in the King's County; it had been mended by an iron clamp where the blade was split. They are all of black oak, and present the appearance of great antiquity.

No. 5 is a rope of three strands of heath, found in sinking a sewer on Michael's-hill, opposite the western entrance of Christ Church Cathedral, Dublin, 10 feet beneath the surface, and—*Presented by Park Neville, Esq., City Engineer.* Heath ropes, although very rare, are not altogether unknown in modern times; but one of the strongest and most durable pieces of rude cordage is that formed out of the fibre of the bog-deal, until very recently commonly used in roping beds, and sometimes in thatching in the west of Ireland.

SPADES AND FORKS.—Spade husbandry, it is generally considered, preceded ploughing, which necessitated the use of domesticated oxen, or of horses, which latter were, in all probability, imported into Ireland as civilization and intercourse with other countries progressed. Fig. 139, No. 8, on the following page, drawn from the largest of a pair of three-grained forks, or grapes, of gray oak, is 7 feet 5 inches in length, 7 inches wide in the blade, which is 3 feet 10 inches long from the step to the end of the prongs. No. 6 is a smaller specimen of the same description of implement, also formed of oak; it is 7 feet 2 inches in length, 1 foot 11 inches from the step or foot-holder to the end of the prongs, and $6\frac{1}{2}$ inches across the blade. They, with No. 7, were found in a

bog near Armagh, and were—*Presented by the Rev. T. R. Robinson*, late President of the Academy.

Until very lately the Irish spade in common use was a long, narrow, one-sided implement, called a *Loy*, shod with iron, and either formed out of a single piece, generally of ash, or made up of two portions, the *fac*, or blade, and the shaft, or handle.

No. 9, Fig. 140, formed out of willow, is of this variety, but whether ever shod with iron is questionable. It is 4 feet long, of which the blade is 1 foot 2 inches, by 5 inches in breadth. It was found at a great depth in a bog near Roscrea, and was presented to Dean Dawson by the Hon. A. Prittie. The *Slane*, used for cutting turf, is a form of light loy, with a wing rising from the extremity of the iron blade. No. 7, here figured, is a spade-like implement, of antique form, and composed of

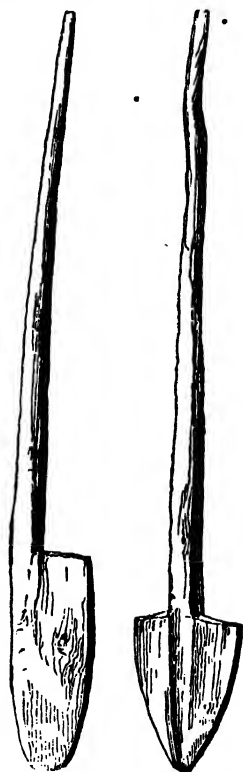


Fig. 140. No. 9. Fig. 141. No. 7.

black oak, 4 feet long, of which the blade is 10 inches, by $6\frac{1}{2}$ broad. No. 10 is a piece of a garden spade, of very old, hard, black oak, shod round the edge with iron; it is 1 foot 9 inches in length, but is broken off short above the double step. Until very recently the shovel common in Galway and other

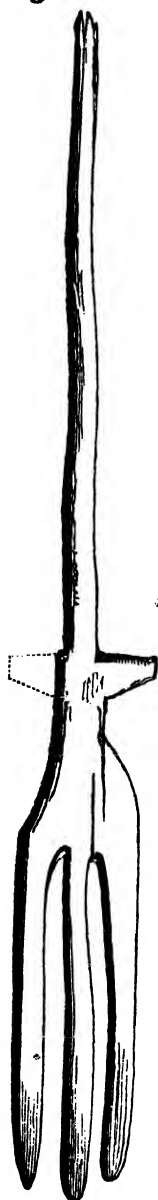


Fig. 139. No. 8.

parts of the west of Ireland, was composed of wood, shod with iron round the edge for about 2 inches in breadth ; it was usually made of sallow. No. 11 is a two-pronged spade or fork, 4 feet 4 inches in length, the handle composed of sallow, but the spade portion of very old, black oak ; the iron shoeings, 1 foot $1\frac{1}{2}$ inches in length, are quite separate. This is a modern tool, still in use among the islanders on the western coast : it was—*Presented by William Todhunter, Esq.* Besides these kinds of forks and spades, there is in common use in the moory districts of the West a long two-handed dibber, with or without a cross-piece, used for planting potatoes, and called a *Steeveen*.

MILL TIMBER.—No. 12, Fig. 142, on the lower Shelf of the third space in the Glass-case, is the quern-cover referred to at p. 106. It is formed out of a single piece of fir, and con-

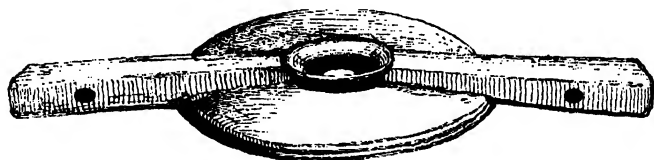


Fig. 142. No. 12.

sists of a circular bowl-shaped top, which fitted on the upper stone of the quern ; it is hollow below, and convex above, with an aperture for the grain-hole, presenting an everted lip for the hopper. On either side handles project, each perforated for the application of a rope. The length across the handle is 2 feet 4 inches, and the width of the bowl portion 13 inches by about 10, but it was, probably, originally circular. It was found in July, 1835, four feet under the surface in Derryboy bog, in the parish of Killyman, county of Tyrone.

Nos. 13 to 19 are seven pieces of an ancient water-mill, discovered in 1838, in a bog in the parish of Banagher, near Dungiven, county of Derry, and—*Presented by G. V. Du*

Noyer, Esq. With the exception of the first, which is yew, they are all of very old black oak.

No. 13 is a block about $7\frac{1}{2}$ inches square, and $2\frac{1}{2}$ thick, perforated in the centre obliquely. No. 14, a piece of very old black oak, 21 inches long, and 5 broad, cut out at one extremity, and also perforated at the projecting ends as if for a pivot. No. 15 is 16 inches in length, and $3\frac{1}{2}$ broad, also perforated at the extremity and in the centre, as if for the attachment of wooden pins. No. 16 is another portion, flat, perforated, and $9\frac{1}{2}$ inches long, by $4\frac{1}{2}$ broad. Nos. 17, 18, and 19, are scoop-like pieces, each about 14 inches long, and perforated at the extremity, dished at one end, and having a projecting ledge or stop at the back, near the perforation. These, it is believed, were inserted into the periphery of an upright wheel or shaft, and served as the buckets or floats against which the stream played.

A stream of water was conducted to a large vat formed of oak planking, in which stood, it is supposed, the horizontal wheel, to which the portions numbered 17, 18, and 19, formed floats or paddles.* On the borders of the counties of Mayo and Roscommon there still exist small corn-mills, called "gig mills," the stones of which are not much larger than querns; and in these the water plays upon horizontal floats inserted into an upright shaft.

No. 20 is an ancient water-scoop of oak, $5\frac{1}{2}$ inches long, with a hollowed-out handle; the body of it being much worn, apparently by long use; it was found in a crannoge in Ardakillin Lough, near Strokestown, and was—*Presented by the Board of Works.*

KNEADING-TROUGHS, DISHES, BOWLS, LOSSETS, AND TABLES, each of a single piece of wood, appear to have been in common use in early times, and the Academy possesses an exten-

* Mr. Du Noyer furnished the Academy with an ingenious model of this ancient piece of machinery, which was, in all probability, a tuck-mill for thickening cloth. See also articles on "Ancient Water-mills" in the "Ulster Journal of Archæology," vol. iv. p. 6, and in the "Transactions of the Kilkenny Archæological Society," vol. i. p. 154.

sive collection of such articles. No. 25, represented by the accompanying illustration, Fig. 143, is a good example of this variety of dish, although the

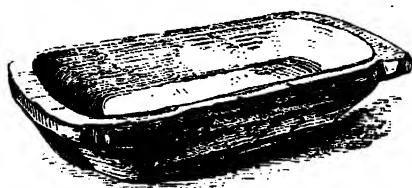


Fig. 143. No. 25.

smallest specimen of the lot. It is formed out of a piece of sycamore, and is $19\frac{1}{2}$ inches long, by $11\frac{1}{2}$ broad, and 3 deep. A

projecting handle, supported by a keel-shaped piece beneath, extends across each extremity. It was found in the bog of Moyntagh, parish of Drumcree, county of Armagh, in 1832, and was—*Presented by the Rev. Charles King Irvine*. “A nest of such dishes, diminishing in size, and lying inside this, were found at the same time; they were, however, imperfect, and split when drying.” There are six such dishes in the Collection, but none so deep as this in proportion to its size.

No. 21, the largest-sized dish, of elm, oval in shape, 3 feet long, 21 inches broad, and $3\frac{1}{2}$ deep; the handle is 15 inches across. It was found in the bog of Emlaroy, county of Roscommon, in 1850, and was—*Presented by D. H. Kelly, Esq.* No. 22, a dish, 2 feet 9 inches long, by 20 inches across the middle, and $2\frac{1}{2}$ deep; it is of old black oak, oval in shape, but square at the handles. It was—*Presented by Arthur Webb, Esq.*, of Hilltown, county of Meath. No. 23, a dish of light-coloured oak, imperfect on one side, 2 feet 10 inches long, about 2 feet wide, and 4 inches deep. The handle is supported in the centre by a keel-like projection. No. 24, a dish or losset, 2 feet 7 inches long, 16 inches wide, and $2\frac{1}{2}$ deep, composed of black oak, the handle strengthened by a keel, like Nos. 23 and 25. For 25, see above. No. 26, a losset-shaped dish of willow, deeper for its size and more oval than any of the others; a portion has been burned out of one extremity. It is 1 foot 6 inches long, by $15\frac{1}{2}$ wide, and 4 deep, and was found in Lisnabin bog, county of Westmeath, 12 feet under the surface, in 1828.

Of the same class of utensils may be specified the oval and circular bowls found deep in bogs, and carved out of a single

piece, running the length of the timber. At the time of their discovery they are generally quite perfect, but on drying, or exposure to the atmosphere, they immediately split into fragments; and if not carefully hooped or corded while in a damp or moist state, they lose their shape. They are provided with perforated handles, carved out of the solid, and might have been used as milk-coolers. The largest and most perfect vessel of this kind in the Collection is No. 27, formed out of a piece of willow; it is $6\frac{1}{2}$ feet in circumference below the handles, but narrows to the mouth, which is about 2 feet across. It is oval in shape, and 1 foot in depth. Each handle is 5 inches long, and perforated with a hole $1\frac{1}{4}$ inches wide. The vessel might have been carried by two persons, with sticks passed through these handles. It was found in Gartagowan bog, parish of Desertcreat, county of Tyrone, in 1856, and was—*Presented by the Rev. Thomas H. Porter, D.D.* Nos. 28 and 29 are of the same variety.

No. 28 is a shallow oval bowl, formed out of a root of willow, measuring about 2 feet in the longest diameter, a foot broad, and 7 inches deep; the handles are narrower than in the foregoing. No. 29 was originally a very perfect specimen of the oval bowl, but it has greatly altered in shape, and split in several places in drying; the handles differ from former specimens in being cut out below, so that it might have been carried between two sticks, or by the hands; it was found deep in a bog near Oughterard, county of Galway, and was—*Presented by G. F. O'Flahertie, Esq.* Two others were found in the same place, but fell to pieces in the hands of the workmen (see Proceedings, vol. vi. p. 160.) No. 30 is a shallow boat-shaped bowl, of the same class as the foregoing, and composed of willow, 2 feet 4 inches long, and 11 inches across; there are two holes near the upper edge, on one side, which correspond to the holes upon the table No. 35, with which it was found (see Fig. 143, p. 211). No. 31 is a bowl-shaped vessel of three circles, nearly on a level, and possibly made to hold three different kinds of food, like delf and silver dinner vessels of the present day; it is of willow, $9\frac{1}{2}$ inches across, and each hollow about $1\frac{1}{2}$ deep. No. 32, a willow

dish, nearly circular, and standing upon a raised foot or boss; it is 14 inches in diameter, and was turned in a lathe, upon the long grain of the timber.

Two examples of single-piece wooden bowls, of a small size, and each furnished with one handle, may be seen in the fourth Glass-case, Nos. 33 and 34. The former is formed of sallow, and is $9\frac{1}{2}$ inches in the long diameter, and 4 deep. It has one small handle, apparently more for the attachment of a string than to lift it. It was found in a bog near Rathconrath, county of Westmeath. The latter, No. 34, shown in

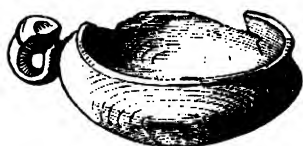


Fig. 144. No. 34.

the accompanying cut, Fig. 144, is also of willow, $8\frac{1}{2}$ inches long, and $3\frac{1}{4}$ deep. It is a beautiful antique shape, and in both handle and general contour greatly resembles some of the ancient bronze

vessels in the Academy's collection.

Somewhat more of a food implement than an article of household economy is the small portable table, No. 35, Fig. 145, which was possibly used in bread-making, or as a kneading-trough, as well as for eating off. It is 2 feet $4\frac{1}{2}$ inches long, and nearly 16 inches broad; the top is flat, and slightly curved outwards on the sides, and inwards at the ends. It is supported by four short legs, each $4\frac{1}{2}$ inches high, and connected on three sides by a raised ledge, $\frac{3}{4}$ ths of an

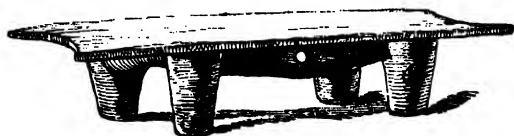


Fig. 145. No. 35.

inch thick. This ledge is perforated with two holes, which in distance correspond to those in the bowl, No. 30, with which it was found, and which was then of sufficient size "to

cover the extremities of the four legs." Both table and bowl are of willow. They were found in a turf bog, in the townland of Killygarvan, parish of Desertcreat, county of Tyrone, four or five feet below the surface, and were—*Presented by the Rev. Thomas H. Porter, D. D.*, who states in the *Proceedings*, vol. iii. p. 22:—"It may be inferred the table was used by persons who sat on the ground at their meals; and that the dish, when not in use, was attached by a thong to the under surface of the table, which might be hung against the wall of the dwelling, or slung on the baggage when the owners migrated from place to place in the woods. The rim on the under surface may have been of use in kneading dough, the table being inverted for that purpose. With the dish there was a quantity of hazel-nuts," but nothing else was found in the vicinity.

BARRELS, formed out of a single piece, with the exception of the top and bottom, appear to have preceded the staved and hooped vessels in modern use. No. 36, in the lower



Fig. 146. No. 37.

compartment of the Glass-case in the Eastern Gallery, is a good specimen of this description of vessel, although of small size. It is 21 inches high, and 15 across the opening; upon one side there is a handle, with which it might be either carried in the hand or slung on a pole; the timber is what is termed *sallow*. No. 37 is the remains of a single-piece barrel, which enclosed a fine specimen of *bog-butter*; it is placed in the centre of the fourth compartment of the Gallery on the southern side. Although much injured by time, the original size may be computed from that of the material which it surrounded. It is formed out of a piece of *sallow*, is 26 inches high, and 32 in girth. Both top and bottom pieces still remain.

No. 38 is a small churn-shaped vessel, formed out of a single piece of *yew*, $16\frac{1}{2}$ inches high, and $9\frac{1}{4}$ from out to out at the bottom,

which is fitted with a single piece; it is provided with two handles, but not on opposite sides; between these handles the space is comparatively flat, as if made for fitting upon the back; it is grooved at top for the lid, which fitted into it; and there is a bung-hole on the outer side. Nos. 39 and 40 are two imperfect wooden vessels, of the canister shape, the latter in process of formation; each about 10 inches high, and 2 feet 6 inches in circumference; they are furnished with handles for string-holes near the top, which is formed into a narrow bottle-shaped neck, while the other extremity is grooved like a barrel, for the insertion of the bottom; they were evidently worked with a hand-tool, and not in a lathe (see "Dublin Penny Journal," vol. i. p. 322). No. 41, a can of willow, $11\frac{1}{2}$ inches high, with a handle at top; the bottom, which is 7 across, is formed of a separate piece. This vessel, which was turned in a lathe, is comparatively modern. No. 42, the oaken cover of an oval vessel, 7 inches long by 5 broad; it was found in a bog at Castlekelly, county of Galway, and—*Presented by D. H. Kelly, Esq.*

MILK-PAILS AND BUTTER-PRINTS.—No. 43, shown in the accompanying cut, Fig. 147, is a four-sided oblong pail or bucket, formed out of a single piece of red deal, 1 foot long,

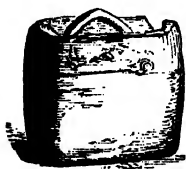


Fig. 147. No. 43.

$10\frac{1}{2}$ inches deep, and $6\frac{1}{2}$ broad. It is one of the most remarkable vessels in the collection of wooden articles; the moveable handle, which is composed of a piece of yew branch, was pressed, when in a flexible state, into notches with projecting lips on the inside.

It was found in Meenskehy bog, near Millstreet, county of Cork, under 6 feet of bog, and was—*Presented by John E. Herrick, Esq.* No. 44 is a long, narrow, single-piece vessel, of sycamore, without a handle, $10\frac{1}{2}$ inches high, $4\frac{1}{2}$ wide at bottom, and 3 at top.

No. 45 is an oblong single-piece box, such as may be found in most peasants' cabins of the present day, used either as a salt-box or for holding rush candles, probably the former. It is of yew, $16\frac{1}{2}$ inches long, $4\frac{1}{2}$ wide, and the same deep, and has the front decorated with some rude carving.

There are three ancient butter-prints or stamps in the Collection; Nos. 46 and 47 are circular, with handles projecting from the sides, and No. 48, which is oblong, has the handle upon the back. No. 46, of beech, is 3 inches across the circle, on the front of which is a rude flower-like pattern; the obverse is plain. It was found at Shrewle Castle, county of Carlow, and—*Presented by Miss Helen Cooper*. No. 47, Fig. 148, of willow, shown in the accompanying cut, is $5\frac{1}{2}$ inches across the circular portion, and has a perforated handle, $4\frac{1}{2}$ inches long. There is a rude star-shaped pattern upon the obverse side. No. 48, of oak, is oblong, 7 inches by $4\frac{1}{2}$; the pattern though much obscured, appears to be floral. This is apparently the most ancient of the three



Fig. 148. No. 47. butter-prints in the Collection.

DRINKING-VESSELS.—METHERS, so styled from being used in drinking mead or metheglin, are two-pieced wooden vessels, varying in height from 6 to 12 inches, and capable of holding from one to three pints. They are generally four-sided at the top, and round or oval at the bottom, and may be divided into three varieties, the one, the two, and the four-han-

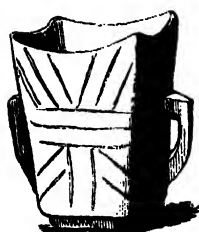


Fig. 149. No. 57.



Fig. 150. No. 73.



Fig. 151. No. 88.

dled: in some of the last the handles project below the bottom, and form feet. The accompanying Figures 149 and 150, drawn from Nos. 57 and 73, afford good examples of both these forms of ancient drinking-vessels, while Fig. 151,

from No. 88, is a good specimen of the wooden goblet, or tumbler-shaped drinking-vessel, turned in a lathe, the others being formed by hand. It is, however, much more modern than the mether.

The mether and its handles were always formed of a single piece, but the bottom was separate, and inserted into a groove, within an inch or three-quarters of an inch of the lower end, and is often a different wood from that in the body of the vessel. It was, in all probability, pressed into its place after the vessel had been soaked some time in water, so as to expand the circle, into which it afterwards fitted closely, when the wood contracted; in some cases the bottom was further secured by a hoop of wood, copper, or iron. Many methers are rudely but ingeniously carved. In material these drinking-vessels afford great variety, viz., yew, walnut, willow, sycamore, oak, beech, elm, crab-tree, and even pine. There are twenty methers in the Academy's collection, some of great age; one single-handled, thirteen two-handled, and thirteen four-handled, in three of which latter the handles are prolonged into feet.

METHERS.—No. 49 is of willow, the only specimen of a *One-handled* vessel of this class in the collection; it is $7\frac{1}{4}$ inches high, by $4\frac{1}{2}$ broad at top, and likewise differs in shape from all the others. No. 50, a very old *Two-handled mether*, slightly decorated with lines and circles, square at top, and round at bottom, formed out of a piece of walnut, $5\frac{3}{4}$ inches high, $3\frac{1}{2}$ in the clear of the top, and $2\frac{1}{2}$ within the round of the bottom. It was—*Presented by Lord Farnham*. No. 51, also of walnut, is 6 inches high, and has a hoop-mark at the bottom. No. 52, of willow, plain, $6\frac{3}{4}$ inches high, had been originally hooped below. No. 53, a large mether of yew, decorated with a triangular chequered pattern, is $7\frac{1}{2}$ inches high, and 5 wide at top one way, and $4\frac{1}{2}$ the other. No. 54, of yew, is $6\frac{1}{2}$ inches high, and 4 across the opening; two wooden hoops encircle the bottom. No. 55, of sycamore, more modern than the foregoing, $6\frac{1}{4}$ inches high, and 4 wide. No. 56, of yew, $5\frac{3}{4}$ inches high, and 4 wide; the handles are prolonged so as to reach the bottom, like some of those in the four-

handled variety. No. 57, a large methers of sycamore, nearly square at top and bottom, decorated upon the sides, and having a hoop-mark below; it is $7\frac{1}{2}$ inches high, and $5\frac{1}{4}$ wide. No. 58, a small, plain, two-handled methers of elm, originally hooped below, $5\frac{1}{2}$ inches high, and $3\frac{1}{4}$ wide. No. 59, a large broad methers of sawall, $6\frac{1}{4}$ inches high, and $5\frac{3}{4}$ wide at top—*Presented by Lord Furnham*. No. 60, of oak, $4\frac{1}{2}$ inches high, and $5\frac{1}{2}$ wide, with a hoop-mark below. No. 61, a small methers of deal, 4 inches in height. No. 62, a small walnut methers, 4 inches high, by 3 wide at top. No. 62A, a large square methers filled with bog butter, placed in Class IV.

FOUR-HANDLED METHERS are usually more of a square than a round form, and present two varieties—those in which the handles are placed midway up the side, and the specimens in which the handles project below the level of the bottom, and serve as feet. No. 63, upon the top Shelf, affords a good example of the first variety, and is that figured and described in the “*Dublin Penny Journal*,” vol. ii. p. 249. It is $8\frac{3}{4}$ inches high, $4\frac{3}{4}$ wide at the mouth, and is formed out of a piece of crab-tree. A copper hoop, $\frac{3}{4}$ ths of an inch deep, surrounds the bottom; the sides are covered with various marks and devices, possibly cut on them at different times, long subsequent to the formation of the vessel, and, among the rest, the inscription “*Dermot Tully, 1590.*” This curious old vessel was—*Presented by W. Allen, Esq.* No. 64 is said to have been originally in the possession of the O'Donohoes of Killarney, and is one of the most elegantly formed methers in the collection. It stands $8\frac{1}{4}$ inches high, is perfectly circular at the bottom, which is $3\frac{3}{4}$ inches in diameter; the top is square, and slightly indented on the sides and edges, which latter are remarkably thin and sharp; the material is light-coloured yew, and the handles are prolonged towards the lower end. No. 65 is another good specimen of the four-handled methers, somewhat similar to the last, of light-coloured yew, about 8 inches high, and $4\frac{1}{2}$ across the opening.

In the following specimens the handles are prolonged to the hoop-marks at the bottom. No. 66, a large square methers of dark yew, decorated, and having a hoop-mark at the bottom, is 8 inches high, and $5\frac{3}{4}$ wide. No. 67 is middle-sized, and much worn at the top edge, as if from long use, the handles prolonged to the hoop-mark; it is composed of yew, and decorated with straight lines; is $6\frac{1}{2}$ inches

high, round at bottom, and square at top. No. 68 is a small decorated mether, $5\frac{1}{2}$ inches high, of sycamore. No. 69, a tall mether of yew, hooped with tin at the bottom and middle, $7\frac{1}{2}$ inches high, by 4 wide at the opening; the handle is notched. No. 70, a small mether of dark elm, hooped with willow, the handles notched, $4\frac{3}{4}$ inches high, by 3 wide. No. 71, a very old and much worn vessel of sallow, $6\frac{1}{2}$ inches high. No. 72, of sallow, wants a handle; is $6\frac{1}{2}$ inches high, by $4\frac{1}{2}$ wide, hooped with iron.

In the three following specimens the handles are prolonged for some distance below the bottom, so as to act as feet or supports. No. 73, Fig. 150, p. 214, is of sallow, decorated; handles project about $\frac{3}{4}$ ths of an inch below the bottom; it is $8\frac{1}{2}$ inches high, and $4\frac{3}{4}$ wide at top. No. 74, also of sallow, $6\frac{5}{8}$ inches high, by $4\frac{1}{2}$ wide, was originally hooped, and is now supported by the handles, which are prolonged into feet. No. 75, of yew, much decorated, as shown in cut, is $6\frac{1}{4}$ inches long, and has the handles prolonged into feet.

CIRCULAR VESSELS AND DRINKING-CUPS, of a single piece, most of which were turned in a pole-lathe, are of various sizes, from those capable of holding above a quart of fluid measure, to others not larger than a wine-glass. No. 76 is a circular mug-shaped vessel of elm, $7\frac{1}{2}$ inches high, and $3\frac{1}{4}$ wide, with a side-handle. No. 77 is of the same character and material, but wider, being 5 inches broad, and $6\frac{1}{2}$ high. No. 78, ditto, of sallow, 6 inches high, by $4\frac{1}{2}$ wide. No. 79, ditto, of sycamore, $5\frac{1}{4}$ inches, by $4\frac{1}{2}$. No. 80, ditto, of elm, $5\frac{3}{4}$ inches high, by 4 wide. No. 81 is a circular one-piece vessel of sycamore, $4\frac{1}{4}$ inches high, by $5\frac{1}{4}$ broad, shaped like a modern noggin, and having two side-handles attached to the body by small nails. No. 82, $4\frac{1}{2}$ inches, by $3\frac{1}{4}$, is a small wooden mug of yew, with a single handle. The four following wooden vessels gradually approach the cup shape, being contracted at the bottom, and then spreading into a foot. No. 83 is an elm cup, $3\frac{3}{4}$ inches high, by $4\frac{3}{4}$ broad. No. 84, ditto, of beech, $5\frac{1}{4}$ inches, by 5. No. 85, of elm, $5\frac{1}{4}$ inches, by $4\frac{1}{2}$. No. 86, a small wooden mug of sycamore, 5 inches, by $3\frac{1}{4}$. No. 87 is a small turned noggin of yew, without a handle.

GOBLETs and wooden vessels with tumbler-like stems follow here. No. 88, figured on page 214, is the best specimen of this variety. It is of elm, 8 inches high, by $5\frac{1}{2}$ wide in the opening. No. 89,

ditto, imperfect, of sallow, $8\frac{1}{2}$ inches, by $6\frac{1}{4}$. No. 90, ditto, of sallow, 6 inches, by $3\frac{3}{4}$. No. 91, of beech, a shorter specimen, and considerably worn, $5\frac{1}{4}$ inches, by $4\frac{3}{4}$ wide. No. 92, a salt-cellar of goblet-form, 3 inches high, and 3 wide, such as is still in common use in some remote districts. No. 93, a small walnut cup, or drinking-vessel, decorated at the bottom, but unfinished on the inside, very modern, $3\frac{1}{2}$ inches high, by $2\frac{1}{2}$ wide—*Presented by Lord Farnham*. No. 94, a small drinking-vessel of walnut, $3\frac{1}{2}$ inches high, with the bottom inserted. No. 95, a small wooden vessel of wine-glass shape, slightly decorated, but wanting the stem and boss; it is of walnut, and 2 inches wide at the mouth. No. 96, of the same material, a decanter-shaped vessel, decorated, 4 inches high, $2\frac{1}{2}$ wide at bottom, and $1\frac{1}{2}$ at top. The bottom is inserted, and held in its position by pegs driven from the outside. It has the letters B. T. R. on the bottom.

SPECIES IV.—ARTICLES OF HOUSEHOLD ECONOMY, FURNITURE, AND
DOMESTIC USE, ETC.

ALTHOUGH food implements (Species III.) form the great bulk of the wooden specimens in the Academy's collection of antiquities, there are several other wooden articles for domestic uses of considerable antiquity in the Museum, such as candlesticks, beetles used in clothes-washing, trowels, and a number of miscellaneous articles specified in the following enumeration, from Nos. 97 to 114, including portions of the oaken timber used in crannoges or stockaded islands, all of which are arranged in the upper or lower compartments of the central glass-case of the eastern gallery. Besides these, some minor wooden articles of domestic use will be found in Rail-case E, such as bodkins, piercers, and stamps, &c., along with those appertaining to dress and decoration : see No. 116 to No. 137, described at page 237.

No. 97 is an ancient wooden candlestick of fir, $8\frac{1}{2}$ inches high, "found 16 feet deep in the bog of Lower Lyrane, near Blackstones, a wild but beautiful district westward of the Reeks, in the county of

Kerry. In the lower grounds or morasses, the timber of enormous pines, and also cones of the *Pinus pinaster* at considerable depths, have been occasionally dug out. Some years since a large pine, very bare of branches, and near it, a perfect cone, appearing identical with the cone of the *Pinus pinea*, were found at a great depth in a bog near Kenmare. The higher grounds of the Lyrane district are rocky, and these subalpine glens are clothed with native oak (*Quercus sessiliflora*), birch, holly, aspen, and hazel." The candlestick, together with this description of the locality, was—*Presented by William Andrews, Esq.* No. 98, a beetle of black oak, $15\frac{1}{2}$ inches long, and 4 wide, was found at Kiltubbrid Castle, King's County, with the paddle No. 2, and—*Presented by the Board of Works.* No. 99 is another beetle, shorter and more modern than the former; slightly decorated on the surface, and 1 foot in length; it was procured from one of the Strokestown crannoges. Nos. 100 and 101, two paddle-shaped instruments of oak, apparently of great age, with long narrow handles and spoon-shaped blades; the former is 2 feet 6 inches, and the latter 2 feet 1 inch in length. They were "found in old workings at Knockmahon copper mine, county of Waterford, in 1850, about 70 feet below the surface," and were—*Presented by John Petherick, Esq.* No. 102 is a flat, thin piece of black oak, 18 inches long, and 8 broad in the widest part, described in the Dawson Catalogue as "a wooden trowel, found in Mongonvough bog." The handle is perforated with a circular, and the blade with a square aperture cut obliquely through its upper portion. No. 103 is the fragment of a similar instrument, composed of pine about 1 foot long. It was "found in the bog of Cana, at the foot of the Ox Mountains, county of Sligo, in 1845, about 10 feet under the surface," and was—*Presented by the Rev. James Burrowes.* Nos. 104 and 105 are two pieces of fir timber, hewn into eight globular portions, connected by a central stem, and appearing like pieces blocked out for turner's use. They were "found in the bog of Derrybrick, parish of Drumkeeran, county of Fermanagh, in 1846," and were—*Presented by Ffolliott W. Barton, Esq.,* see MS. Presentation Book, p. 52. No. 106 consists of five pieces of timber, like miniature spades and forks, possibly used as dibbers, and formed out of branches of fir and elm. No. 107 is a portion of an ancient vessel of a tub-shape, with the handle-hole at one extremity. Nos. 108 and 109

are two curious blocks of wood, with mortises, "found in a small lake at Montagh, county of Fermanagh." The first is 17 inches high, and the second somewhat less; they appear to have been supports to a large piece of timber which fitted the mortises, and were probably used in mill-work. Both are formed from branches cut off at the forking. They were—*Presented by the Earl of Enniskillen* (see Proceedings, vol. iii., p. 304). No. 110, a very rudely carved human head of oak, 13 inches long, found along with the dish or tray, No. 23, in the Bog of Allen (see Proceedings, vol. v. p. 85). Nos. 111 to 115 are five pieces of oak timber procured from crannoges, each morticed at the end. They average 3 feet 6 inches in length, and 10 inches in breadth, and appear to have been portions of the cross-timbers which connected the piles at certain distances. Other portions of crannoge-beams may be seen in the crypt, along with the boats, &c. &c.

CRANNOGES.—The ancient stone habitation called a *clochaun*, in which an individual or a family resided,—the circular and dome-roofed buildings in which, apparently, a small community lived,—the entrenched earthen raths, possibly stockaded, which included several habitations,—the remains of the celtic city of Fahan,* and the great stone forts, cathairs, and duns, such as Staigue Fort or Dun Aengus,—have been already either alluded to, or specially described in the section devoted to the consideration of the Stone Materials. Under the head of Wooden Material may be considered those stockaded islands denominated in the Irish Annals *Crannoges*, or little wooden islands, of which several have come to light during the recent general drainage of the country. Whether the name was derived from the timber employed in enlarging, securing, and fortifying the island, or from the wooden houses erected on it, or whether also applied to log-houses on the land, is uncertain. But although alluded to so early as the middle of the

* In the Townland of Fahan, west of Ventry Harbour. I am indebted to Mr. Du Noyer for calling my attention to this interesting locality, where clochauns and cathairs of various types abound in a remarkable degree. These Mr. Du Noyer has recently examined and drawn, and has prepared a paper upon them for the forthcoming Meeting of the British Association, which he has shown to me.

See the Ordnance Map of Kerry, Sheet 52.

ninth century, it is remarkable that no examination of a single crannoge occurred until the end of the year 1839.

In most districts in which these islands were found, several small lakes are clustered together, as in the neighbourhood of Strokestown, Keshcarrigan, and Castleblaney, in the counties of Roscommon, Leitrim, and Monaghan. They were not, strictly speaking, artificial islands, but cluans, small islets or shallows of clay or marl, in these lakes, which were probably dry in summer-time, but submerged in winter; these were enlarged and fortified by piles of oaken timber, and in some cases by stone-work. A few were approached by moles or causeways, but, generally speaking, they were completely insulated, and only accessible by boat; and it is notable that in almost every instance an ancient canoe was discovered in connexion with the crannoge. Being thus insulated, they afforded secure places of retreat from the attacks of enemies, or were the fastnesses of predatory chiefs or robbers, to which might be conveyed the booty of a marauding excursion, or the product of a cattle raid.

It may naturally be concluded from the amount of oaken timber invariably discovered in these stockades, that the neighbouring country was well wooded; it is also manifest, from the quantity, age, and variety of the antiquities discovered in these crannoges, that they had been long occupied. We likewise learn from their recent submerged condition how much water had accumulated on the face of the country since their construction, probably owing to the great decrease of forest timber and the increased growth of bog. From the additions made to the height of the stockades, and also from the traces of fire discovered at different elevations in the sections made of these islands, it may be inferred that the rise of the waters commenced during the period of their occupation. The first examined and described was that at Lagore,*

* Loch Gobhair, the chief residence of a small territory in Meath, was very famous in the Irish Annals. See *Four Masters*, A. M. 3581 to A. D. 967. This island is referred to at the years A. D. 848 and 933.

near Dunshaughlin, county of Meath, an account of which was communicated to the Academy by the writer of this Catalogue, and described at length in the Proceedings for April, 1840 (see vol. i. p. 420). The Dunshaughlin crannoge differed, however, from all others since discovered, in not being then either submerged or surrounded by water; it consisted of a circular mound of about 520 feet in circumference, slightly raised above the surrounding bog or marshy ground, which forms a basin of about a mile and a half in circuit, and is bounded by elevated tillage and pasture lands. The lake in which this crannoge was situated has been drained within the memory of man. To the labours of the chemist making known the value of bones for manuring purposes, we are indebted for this ancient habitation being brought to light. Some labourers, when clearing the stream-way which surrounds a portion of it, having found several large bones, the fact became known to the usual collectors of such articles, who resorted there in numbers, and above 150 cart-loads were thus obtained. "The circumference of the circle was formed by upright posts of black oak, measuring from 6 to 8 feet in height; these were mortised into beams of a similar material, laid flat upon the marl and sand beneath the bog, and nearly 16 feet below the present surface. The upright posts were held together by connecting cross-beams, and [said to be] fastened by large iron nails; parts of a second upper tier of posts were likewise found resting on the lower ones. The space thus inclosed was divided into separate compartments by septa or divisions that intersected one another in different directions; these were also formed of oaken beams in a state of great preservation, joined together with greater accuracy than the former, and in some cases having their sides grooved or rabbited to admit large panels, driven down between them. The interiors of the chambers so formed were filled with bones and black moory earth, and the heap of bones was raised up, in some places, within a foot of the surface."

The animal remains found therein consisted of those of several varieties of oxen, also swine, deer, goats, sheep, dogs, foxes, horses, and asses,—specimens of which may be seen in Section IV. With these were found a vast collection of antiquities : warlike, culinary, personal and ornamental, of stone, bone, wood, bronze, and iron, &c., several of which are preserved in the Academy's Museum, and consist of swords, knives, spears, javelins and dagger-blades, sharpening stones, querns, beads, pins, brooches, combs, horse-trappings, shears, chains, axes, pots, and bowls, &c. (see *Proceedings*, vol. i. p. 425; see also the "*Archæological Journal*," vol. vi. p. 101). Some human remains were likewise discovered there, a specimen of which may also be seen in the Museum.

A few months after the discovery of the Lagore crannoge, an island, "artificially formed of timber and peat," was brought to light upon lowering the water in Roughan Lake, near Dungannon, "and numerous fragments of ancient pottery and bones, and a few bronze spear-heads, were discovered," together with the quern, No. 19, described at p. 111 (see *Proceedings*, vol. i. p. 457). It is said to have been the last retreat of Sir Phelim O'Neill in 1641, who held out there until boats were procured from Charlemont for his capture.

The next discovery of a similar structure was that at Lough Gur, county of Limerick, from which a vast collection of bones and a great number of antiquities have been from time to time obtained.*

Afterwards, Mr. Shirley, in his "*Account of the Territory of Farney*," described a stockaded island of this description found in Lough Fea, in the county of Monaghan, in 1843; and in 1844, two others at Monalta and Lough na Glac, in the same district.† The remains of crannoges were

* The author is indebted to a clergyman in the neighbourhood of Bruff for much information respecting the island exposed on lowering the waters of Lough Gur. There does not appear to have been any surrounding enclosure or staking upon it.

† The *Archæological Journal*, vol. iii. p. 46.

also discovered at Ballinderry Lake, near Moate, county of Westmeath, and vast quantities of bones and antiquities, and two canoes, were disinterred therefrom.* A crannoge was discovered in Lough Faughan, in the barony of Lecale, county of Down, and from it was procured the pitcher, No. 9, in Class II.† In 1845, the lake of Corcrecevey, county of Tyrone, was drained, and its crannoge examined by Mr. Burnside.‡ Subsequently, several crannoges were discovered in the counties of Roscommon, Leitrim, Cavan, and Monaghan, during the workings of the Commission for the Arterial Drainage and Inland Navigation of Ireland, amounting altogether to about forty-six; viz. twenty in Leitrim, twelve in Roscommon, two in Cavan, six in Monaghan, and one in each of the counties of Limerick, Meath, Westmeath, Down, King's County, and Tyrone, including those not discovered by the officers of the Board of Works. No doubt others have been noticed in their several localities, although not yet described; and as the general drainage of the country proceeds, other crannoges will be exposed to view.

The following are the results of the examination of crannoges made by the engineers of the Board of Works:—

They are surrounded by stockades driven in a circle from 60 to 80 feet in diameter; but in some cases the enclosure is

* The author is indebted to Mr. Hayes of Moate for a description of these crannoges, and a plan and map of the locality.

† The Rev. Charles Archbold has afforded a notice of the Lough-falcon, or Lough-faughan crannoge. He says:—"I found that the island was in a great measure, if not altogether, artificial. There were large stakes driven into the ground, and completely enclosing the space within, but not rising above the surface, so as to form a palisade, but evidently for the purpose of keeping in the soil from the encroachment of the water. The tradition respecting it is, that there had been a castle on the shore opposite, the chieftain of which caused this island to be made as a place of refuge from the sudden onslaughts of the O'Neills; and to render this retreat more secure, he would never allow more than one boat or canoe on the lake. During the drainage of the lake some years ago, a canoe, formed out of a solid piece of oak, was found near the island."

‡ See the Earl of Enniskillen's communication in *Proceedings*, vol. v. p. 214.

larger, and oval in shape. The stakes of these are generally of oak, mostly young trees, from 4 to 9 inches broad, usually in a single row, but sometimes in double, and in a few instances in treble. The portions of these stakes remaining in the ground generally bear the marks of the hatchet by which they were felled. Several feet of these piles must have originally projected above the water, and were probably interlaced with horizontal branches, so as to form a screen or breastwork.

The surface within the staked enclosure is sometimes covered over with a layer of round logs cut into lengths of from 4 to 6 feet, over which was placed more or less stones, clay, or gravel. In some instances this platform is confined to a portion of the island. Besides these, pieces of oak framing, with mortises and cheeks cut in them, have been found within the circle of the outer work.

In almost every case a collection of flat stones was discovered near the centre of the enclosure, apparently serving as a hearth; in some instances two or three such hearths were discovered at different parts of the crannoge. Generally one or more pair of querns were found. Considerable quantities of the bones of black cattle, deer, and swine, were also discovered upon or around the island. (See Report upon the Presentation of Antiquities by the Board of Works, by William T. Mulvany, Esq., in the Proceedings, vol. v. App. p. xlv.)*

The following illustrations, reduced from plans and sections made by the drainage district engineers, afford us good ideas of two descriptions of crannoges. Fig. 152 is of that in Ardakillin Lough, near Stokestown, county of Roscommon, constructed with both stones and oak piling, and Fig. 153, one of those in Drumaleague Lake, county of Leitrim, the centre formed chiefly of alder timber, with the exception of the hearth-stones for fire-places; the former is an irregular oval, and the latter a perfect circle. Fig. 152 presents a section of the island in Arda-

* See maps and plans of the Drainage and Navigation of the Ballinamore and Ballyconnell districts, under Mr. T. J. Mulvany.—*Presented by the Board of Works.*

killin Lough; the top line shows the former highest water-level, the second that of the ordinary winter flood; and the third the ordinary summer water. The upper layer was formed of loose stones surrounded by an enclosing wall, supported in part by piling; the lower portion shows, as far

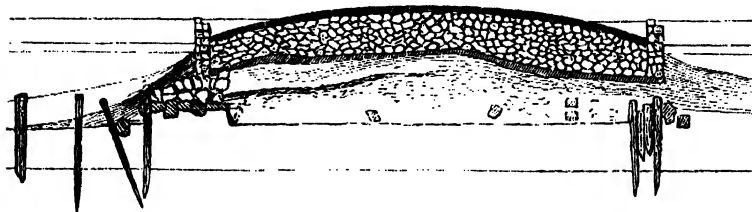


Fig. 152.

as it is possible on so small a scale, the original clay, peat, and stones of the island, on which were found, in various places, strata of ashes, bones, and logs of timber. The oak piling of different descriptions is shown in section, that driven obliquely being sheet piling, which was continuous all round the island.

In the same locality, celebrated as Cloon-Free, one of the royal residences of Connaught, and in the vicinity of Carn Free, the crowning place of its kings, and of Rathcroghan, the Tara of the west, several other islands were discovered in the cluster of lakes which occur in that locality; in one of these, Cloonfinlough, "the island of the white lake," was brought to light another crannoge, of which Denis H. Kelly, Esq., gave a description in 1850 (see Proceedings, vol. v. p. 208). He says:—"The dimensions of the island are about 130 feet in diameter; it is constructed on oak piles (many of them showing the action of fire), driven into the soft marl, at regular distances, and tied together by horizontal oak stretchers so as to form a triple stockade round it, with an interval of about 5 feet between each stockade. Outside of this, to the north-westward, are a number of irregularly placed piles, stretching a short distance from the islet, and it was adjoining to them

the great deposit of bones was found. The centre of these stockades was laid with trunks of smallish oak trees, placed flat on the marl, and all pointing to a common centre, thus forming a platform whereon the island itself was constructed. When it was first observed, there was jutting out from the island to the lake, towards the west, a kind of jetty or pier, formed of a double row of piles and stretchers running parallel, about 8 feet asunder, and on which logs of timber were closely laid horizontally." Between the island and a ruined church on the mainland were found two canoes, hollowed out of single oak trees, and each not more than 2 feet wide. In making a section of the island it was found to consist of a close-laid pavement of irregular-sized boulder stones, strata of bones and burned earth, layers of flat-surfaced stones; and again, strata of black earth with bones, particularly those of oxen and other domestic animals. The antiquities found there were of a similar character to those procured from the Dunshaughlin crannoge, and will be described in their proper places in subsequent portions of this Catalogue.

Drumaleague Lough, in the vicinity of Lough Scur, county of Leitrim, was about a mile in length, and, when lowered thirteen feet, disclosed two crannoges, also a canoe of a single piece of oak, 18 feet long, 22 inches broad, square at stem and stern, and remarkable for having apertures for row-locks cut into the sides, like that described at p. 204.

Fig. 153, on the following page, is the plan of one of the islands discovered in Drumaleague Lough, and affords a good idea of the general arrangement of these timber structures. The outer paling of stakes includes a circle 60 feet in diameter, in some parts double or treble; "there are clusters of stakes in other portions of the island, some of which appear to have been placed with regard to a particular arrangement. A, the central oblong portion, consists of a platform of round logs, cut in lengths of from 4 to 6 feet, chiefly of alder timber. B, a collection of stones with marks of fire on

them. C, a heap of stiff clay. D, the root of a large tree, nearly buried in the peat, the surface of the wood bevelled off

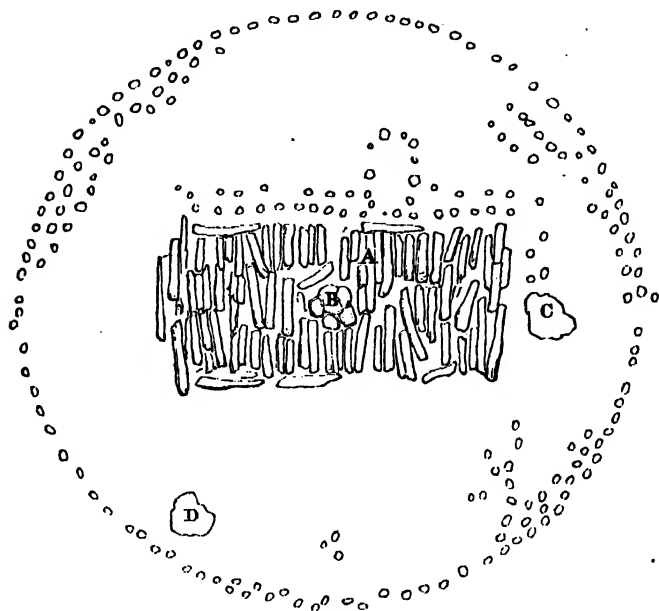


Fig. 163.

with a hatchet, so as to form a sort of table, under which a considerable quantity of bones was found, apparently those of deer and swine.”*



Fig. 164.

Fig. 154 shows a section of the second crannoge in Drumaleague Lake, which was 72 feet in diameter within the circle of oak stakes represented in the cut. Between these may

* The foregoing quotations are taken from the description attached to the map furnished by the Board of Works; the scale in the illustration is 20 feet to an inch.

be seen in the section—B—horizontal pieces of alder timber, laid upon the natural surface of the island, each log being “from 3 to 8 inches in diameter, all water-soaked and rotten. This stratum was 3 feet 6 inches deep. A, a heap of stones, with marks of fire on them; other hearths were found in different parts of the island. C, the lower stratum, of black, rotted sticks and branches of all sorts, lying in all directions. This stratum was examined for four feet in depth, and appeared to continue deeper. DD, two heaps of stones, found in the lower stratum. E, a large quantity of the bones of deer, swine, &c., found together about four feet below the surface. The circle of this island, which was tolerably regular, was formed by a single row of oak stakes.”

The discoveries connected with Crannoges have been the greatest additions to the subject of Irish antiquities made during the present century. Besides the valuable donations to the Museum, and the reports of the engineers employed under the Board of Works, the Academy has been likewise furnished with several plans, maps, and sections of crannoges, worthy of the most careful preservation. From three of these drawings the woodcuts on pages 226 and 228 have been reduced.

The foregoing particulars will explain the nature of crannoges; and the following historic notices, together with the authorities from whence derived, may serve to give an additional interest to the subject, and also to fix the dates of their occupation:—

As the earliest discovered and examined crannoge in modern times has been that of Lagore, near Dunshaughlin, county of Meath, so, upon looking into the authorities, we find it the first alluded to. Loch Gabhair is said to have been one of the nine lakes which burst forth in Ireland A. M. 3581.—*Annals of the Four Masters*. See also Colgan's “*Acta Sanctorum*,” p. 422, n. 14. In A. D. 848, we read that Cinaedh, son of Conaing, lord of Cianachta-Breagh, in

Meath, went with a strong force of foreigners, and plundered the Ui-Neill from the Sionainn (the Shannon) to the sea; "and he plundered the island of Loch Gabhor, and afterwards burned it, so that it was level with the ground." And in the old translation of the "Annals of Ulster," Codex Clarendensis, the passage is thus rendered:—"And brake down the island of Loch Gavar to the very bottom." Again, in A. D. 933, the same authority informs us that—"The iland of Loch-Gavar [was] pulled down by Aulaiv O'Hivair," and the cave of Knowth, on the Boyne, plundered during one of the Scandinavian marauding expeditions with which the kingdom was then troubled. Thus we have evidence that Lagore crannoge was occupied upwards of one thousand years ago.

A. D. 991:—"The wind sunk the island of Lough Cimbe (now Lough Hackett, near Headford, county of Galway) suddenly, with its dreach and rampart, that is, thirty feet."—*Annals of the Four Masters*. This circumstance is likewise recorded in the "*Annals of Clonmacnoise*" under the year 984.

A. D. 1246. "Turlough, the son of Hugh O'Connor, made his escape from the crannoge (wooden house) of Lough Leisi, in autumn, having drowned his keepers."—*Annals of the Four Masters*. This lake, although no longer known by that name, has been recognised by Dr. O'Donovan as Muickeanagh Lough, in O'Hanly's country, near the old church of Kilglass, county of Roscommon, and not far from the site of the Strokestown crannoges. It is also alluded to under the year 1452, as the scene of the murder of Loughlin Oge O'Hanly.

A. D. 1368. "Teige, the son of Manus, son of Cathal, the son of Donnell O'Connor, was treacherously taken prisoner by Rory, the son of Turlough, at his own fortress at Ard-an-choillin,"—the height of the little wood,—now Ardakillin, in the parish of Killurkin, county of Roscommon; in the neighbourhood of which is the lake bearing the same name, but formerly called Lough Cairgin, and referred to in 1388, thus:—"Donnell O'Connor made an incursion into Machaire-Connacht, and burned Ard-an-choillin and the island Loch-Cairgin."—*Annals of the Four Masters*. The level of this lake was lowered by the Board of Works in 1850, when four artificial islands were discovered in it, on the principal of which upwards of fifty tons of bones were found.

A. D. 1436. "The crannoge of Loch-Laoghaire (near Clogher, in Tyrone) was taken by the sons of Brian O'Neill."—*Annals of the Four Masters*. The O'Neills, it is said, on arriving at the lake commenced the construction of cots or small boats, for the purpose of taking the crannoge. This island is also referred to in A. D. 1150.

A. D. 1455. "Turlough, the son of Philip Maguire, went to Loch Melge (now Lough Melvin, on the borders of Leitrim and Fermanagh), and took and plundered Mac Clancy's crannoge on it."—*Annals of the Four Masters*.

A. D. 1495. "Magauran, Chief of Tullyhaw, was drowned in Loch Crannoige," or the lake of the crannoge, now Ballywillin Lough, county of Cavan.—*Annals of the Four Masters*.

A. D. 1512. Philip Maguire made an incursion into Tullyhaw, county of Cavan, and "from thence they proceeded to the crannoge of Magauran, which they took."—*Annals of the Four Masters*.

A. D. 1540. The O'Donnells "went into the crannoge of Loch Beithaigh," now Lough Veagh; in the parish of Gartan, county of Donegal; and "O'Donnell broke down and demolished the crannoge."—*Annals of the Four Masters*.

A. D. 1560. Teige O'Rourke "was drowned in the autumn of this year, as he was going across a lake to sleep in a low retired crannoge, in Muintir-Eolais,"—Mac Rannall's country, in the county of Leitrim, possibly one of those on Drumaleague Lough recently examined.

A. D. 1591. The map of the escheated territories made for the Government by Francis Jobson, or the "Platt of the county of Monaghan," preserved in the State Paper Office, contains rough sketches of the dwellings of the petty chiefs of Monaghan, which "are in all cases surrounded by water. One is to be found in every barony distinguished as '*The Island*,' that in Farney was at *Lisanisk*, then called '*Lysonske*,' and is marked in the map as '*The Island Ever M'Cooley's house*.'" The crannoge at Lisanisk, alluded to above, was excavated in 1843 by C. C. Gibson, Esq., who found, "seven feet below the present surface of the earth, in the little island at Lisanisk, and two feet below the present water-level of the lake, a double row of piles, formed of young trees from 6 to 12 inches in diameter, with the bark on; the area enclosed by these

piles was 60 feet in length, by 42 in breadth. Vast quantities of bones were also found there; and also, in a small island in the lake of Monalty, not far from Lisanisk, a canoe or boat formed out of a single piece of oak, and measuring 24 feet in length, besides stone and bronze celts, and hunting spears, and various other instruments were found. The largest house of this description in Ireland is said to have been on an island in Lough Allen, county of Leitrim;* it was the residence of Mac Anaw (now Ford), one of O'Rourke's sub-chieftains."—Shirley's *Account of the Territory or Dominion of Farney*. "The crannoge," adds Mr. Shirley, "was the universal system of defence in the north of Ireland. Thus, one Thomas Phettiplace, in his answer to an inquiry from the Government, as to what castles or forts O'Neil hath, and of what strength they be, states (May 15, 1567), 'For castles I think it be not unknown unto your honors, he trusteth no point thereunto for his safety, as appeareth by the raising of the strongest castles of all his countreys, and that fortification that he only dependeth upon is in *sartin ffrfreshwater loghes* in his country, which from the sea there come neither ship nor boat to approach them; it is thought that there in the said fortified islands lyeth all his plate, which is much, and money, prisoners, and gages; which islands, hath in wars tofore been attempted, and now of late again by the Lord Deputy there, Sir Harry Sydney, which for want of means for safe conduct upon the water it hath not prevailed.'

In Marshal Bagenal's description of Ulster, A. D. 1586, published in the "*Ulster Journal of Archæology*," vol. ii., p. 142, the following reference to O'Neill's condition appears to contain an allusion to a crannoge:—"You shall do verie well to see his lodgings in the fen, where he built his lodging, and kept his cattell and all his men." And, adds the editor, Mr. H. F. Hore, "this stronghold was undoubtedly a crannoge or wooden house, and was probably constructed either on the 'little island called Loch Coe,' mentioned by Bagenal, or on the artificial one called Inish-na-gardy, or Guard Is-

* Inis na Conaire, now called "O'Reilly's Island," opposite Drumshambo, on the county of Leitrim side of Lough Allen, might have been fortified, but it never could have been a crannoge in the strict sense of that term, at least, as I understand it, and have endeavoured to explain it in the foregoing description.—W. R. W.

land in Loughinsholin," county of Derry. It was said to be "a place of considerable strength, and successfully defended by O'Hagan in the wars subsequent to 1641" (see also Dr. Reeves' Notes to "Primate Colton's Visitation," p. 76).

A. D. 1603. Hugh Boy O'Donnell having been wounded, "was sent to crannog-na-n-Duini in Ross Guill, in the Tuathas, to be healed." This wooden house of Duini was situated in the parish of Mevagh, county of Donegal, between Redhaven and Sheephaven.—*Annals of the Four Masters*.

Even so late as 1610 we read of Crannagh Mac Knavin, in the parish of Tynagh, barony of Leitrim, and county of Galway (see "The Tribes and Customs of Hy-Many," edited by John O'Donovan, LL. D.

No doubt many other notices of crannoges will appear in the subsequent investigations of materials for Irish history.

Shortly after the discovery of the Irish crannoges, structures very similar in character were observed in some of the lakes in Switzerland, and have been described by Professor Ferdinand Keller in the "Transactions of the Antiquarian Society of Zurich," vol. ix. The winter of 1853-54 having proved unusually dry and cold, the lakes of Switzerland, deprived of their usual supply from the mountains, fell far below the level previously known to the oldest historians of these localities. In consequence thereof, as well as the result of some previously dry seasons, several Celtic stockades, *Keltische Pfahlbauten*, or crannoges, were discovered in the Lakes of Zurich, Biel, Sempach, Neufchatel, Geneva, and Wallenstad, of which those only in the two former were examined. In the crannoge of Meilen, in the Lake of Zurich, the enclosure extended along the shore, and the stakes, or piles of oak, beech, birch, and fir, which formed it, were pointed at the lower ends, some of them by burning, others with the stone axe. This timber piling was in such a decayed condition that it was not possible to examine it accurately. The piles were placed from 1 foot to 18 inches apart.

Within this enclosure were found quantities of animal remains, especially those of stags and wild swine, the former bearing traces of having been acted upon by stone implements; no bones of domestic animals were brought to light, but much of the bone heap had been destroyed before the place was investigated. One perfect human skull, and fragments of several skeletons, were found. Upwards of one hundred stone implements,—celts, hatchets, hammers, and whetstones, &c., were found, some of them of foreign origin; also knives and scrapers of flint, pins and other pieces of bone, and bowls and vases of earthenware. Some of the tools of flint and stone were inserted into hafts of bone or deer-horn, which were again perforated transversely for the passage of a handle. Several large flags, apparently hearthstones, were also discovered. Although many flint implements were found, it is remarkable that this material is very rare in Switzerland. An amber bead, and a quantity of hazel-nuts, were found, but the only metal object discovered was a single piece of bronze.

Traces of a similar crannoge were discovered near Mänesdorf, in the Lake of Zurich, in 1844, but had not been investigated in 1854.

In the Lake of Biel, near Nidau, a crannoge island, two or three acres in extent, and consisting of an accumulation of round stones, which appeared to have been transported there, has been discovered, but it is still submerged. It is surrounded by piles, and connected with the neighbouring land by a causeway. The antiquities at this island of Sternberg were chiefly of bronze, a few iron points, some earthenware, and a canoe formed out of a single piece of oak. In this lake another submerged crannoge was discovered, distant about 150 feet from the beach—bronze implements were found in it. Also at Lattringen, upon the same lake, two other places have been noticed, showing evidence of crannoge stakes. At Möringen, in the same locality, were found the remains of a submerged

crannoge, with three single-piece canoes, some bronze antiquities, an iron sword, and several clay rings. Three other crannoges were found in the Lake of Biel, at Hagenech, Kleine Insel, and Peters-Insel, but which have not yet been fully explored. An immense canoe, 50 feet long, by from $3\frac{1}{2}$ to 4 broad, and half filled with stones, has been observed embedded in the mud in the neighbourhood of the latter.*

LOG-HOUSES. — Another kind of habitation among the Celtic Irish was that of the Log-house, constructed altogether of beams and planks of timber, and in form resembling the Swiss chalet, a model of one of which, *Presented by Colonel Larcom*, may be seen on the ground-floor of the Museum. The ancient structure of which it is the model was discovered in 1833, in Drumkelin bog, parish of Inver, county of Donegal, by a man searching for bog timber, and was described at the time by Captain W. Mudge, R. N., in the "Archæologia" (see vol. xxvi. p. 361).† As shown in the plan, the house consisted of a square structure, 12 feet wide, and 9 feet high, formed of rough blocks and planks of oak timber, apparently split with wedges. The framework was composed of upright posts and horizontal sleepers, mortised at the angles, the end of each upright post being inserted into the lower sleeper of the frame, and fastened by a large block of wood or fore-lock. "The mortises were very roughly cut, as if they had been made with a kind of blunt instrument, the wood being more bruised than cut; and it may be inferred that a stone chisel [celt] which was found lying upon the floor of the house was the identical tool with which the mortises were cut. By

* *Die Keltischen Pfahlbauten in den Schweizerseen beschrieben von Dr. Ferdinand Keller.* Zürich, 1854. My attention was called to the subject of the Swiss crannoges by Dr. Siegfried, Professor of Sanscrit in Trinity College, Dublin.

† The original communication, together with detailed drawings and plans, &c., was sent to Colonel Larcom, then conducting the Irish Survey, and may now be seen in the "Specimen Book," a most valuable collection of original letters, maps, and drawings, preserved in the library of the Academy, and from which some useful information bearing upon the subject of this Catalogue has been derived.

comparing the chisel with the cuts and marks of the tool used in forming the mortises and grooves, I found it," adds Captain Mudge, "to correspond exactly with them, even to the slight curved surface of the chisel; but the logs have evidently been hewn with a larger instrument in the shape of an axe, which I have no doubt was also of stone, as the marks, though larger than those the chisel would have made, are of the same character, being rather hollow and small cuts, and not presenting the smooth flat surface produced by our common iron axe."

The roof was flat, and the house consisted of two compartments, one over the other, each 4 feet high. The top of the house was 14 feet below the surface of the bog, and, therefore, nearly 26 feet of bog must have grown up within and around it since the period of its occupation. The interstices between the planks in the floorings were filled with a cement, which appeared to be grease and fine sea-sand. The house stood upon a stratum of bog, 15 feet deep, between which and the floor was spread a layer of fine sand, over the surface of a layer of hazel-bushes. A paved causeway, resting upon a foundation of hazel-bushes and birch-wood, led for some distance from the house to the remains of a fire-place, on which was a quantity of ashes, charred wood, half-burned turf, and hazel nutshells.

This appears to have been a very ancient dwelling, surrounded by a staked enclosure, portions of the gates of which were discovered. Upon a level with the floor, and in its immediate vicinity, were found the roots and trunks of several large trees, of bog-sallow, ash, and oak, in an upright position; these probably coexisted with the occupation of the dwelling, which appeared to be only one portion of a collection of houses, and was probably used for sleeping in. A piece of a leather sandal, an arrow-head of flint, and a wooden sword, were subsequently found in the locality. Whether this wooden house is similar in character

to those which formerly existed on the stockaded islands, and may have given them their names of crannoges, is now a matter of conjecture; but, judging from the amount of bog which had accumulated around and above it, as well as the evidence afforded by the flint weapon and stone tool discovered, it must be of immense antiquity. The different steps in the model represent portions of the cut-away bog.

WOODEN HOUSES must have been common in remote districts in Ireland, and were probably similar to the foregoing, although it does not appear that they were known by the name of crannoge. Bird-cage wooden houses, like those so frequently met with in England, were not uncommon in some of the old towns in Ireland. The two last structures of this description existed in Dublin and Drogheda,—the former stood at the corner of Castle-street and Werburgh-street, and was taken down in 1813. The house in Drogheda stood until 1824; and, when removed, the bressimer facing Laurence-street, and containing the following inscription in antique raised letters, each about 6 inches long—was presented to the Royal Dublin Society, and has been, by that body, deposited in the Academy. The inscription runs thus:—**MADE BI NICOLAS BATHE IN THE IERE OF OUR LORDE GOD 1570 BI HIV MOR CARPENTER.** A star separates each word. The family of Bath had considerable possessions in the neighbourhood of Drogheda about the middle and end of the sixteenth century. The timber is oak, and in two pieces, the united length of which is about 31 feet. See “Dublin Penny Journal,” vol. i. pages 89 and 268.

BOXES, composed of timber, although common, and many of great antiquity, have not yet found their way into the Academy, with the exception of one small ornamented oak chest, bearing this inscription—“Com not in hest, to open this chst,” and the date “1616, I. W.” It is 1 foot 9 inches long, and 1 foot high, and had an ingeniously con-

trived secret compartment within it. It was—*Presented by Barclay Clibborn, Esq.*

In the commencement of Rail-case E may be seen twenty-two small articles: most of which appear to be connected with household economy, and are arranged from Nos. 116 to 137. They consist of piercers, stamps, the fragment of a wheel, and the handles and covers of wooden vessels, &c. Of these the most worthy of notice are No. 120, a very perfect and beautiful wooden bodkin, $4\frac{1}{2}$ inches long. Nos. 122 and 123 are conical bits of carved wood, like chessmen. The former, however, is hollowed at the base, as if for the insertion of a stamp, and the latter is carved upon the face of the base with a device not unlike a seal; each is $2\frac{1}{2}$ inches high. No. 135, the oaken top of a spear-handle, found *in situ*; and No. 136, an arrow-head or skewer, like those from Coumanare mountain, in Kerry, and to which reference has been made at page 200.* All these articles were found in crannoges.

Books.—As there is no species in the classification devoted to objects connected with literature, the following example of an ancient wooden book may be placed under the head of Articles of Furniture and Domestic Use. In Rail-case F will be found one cover and four leaves of an ancient waxed tablet-book of pine,† found in a bog at Maghera, county of Derry, and—*Presented by the Rev. J. Spencer Knox*, an account of which was read to the Academy in May, 1845, by the Rev. J. H. Todd, D.D., President, and has been published in the Transactions, vol. xxi. part 2. The leaves and cover are

* Portions of wood resembling in shape that found in Dunabaughlin and those discovered in Coumanare Bog were also found, in connexion with a flintvaen, at Foulksrath (see "Transactions of the Kilkenny Archaeological Society," vol. i. p. 382.)

† In the foregoing description of the various woods I have taken the opinions of intelligent and experienced tradesmen; but in many instances, owing to the great age and the alterations made by time upon the surface of the article, considerable difficulty was experienced in determining the kind of timber of which the object was composed.

of pine wood, each $4\frac{1}{2}$ inches long, and $2\frac{1}{2}$ wide; the cover is carved into compartments for holding the style, and possibly the wax, &c. The leaves are coated to within a quarter of an inch of the edge with wax, now become almost black. "The letters are traced on the wax with a sharp point, and are still in some places very legible; the character is Irish, although the language is Latin." A large portion of the writing has been deciphered, but "appears to have been little better than mere scribbling;" portions of it appear to be rules of grammar, and it has been conjectured that the book "was probably the property of some schoolmaster or scholar, who had inscribed upon it, amongst other things, his exercises in grammar and dialectics." The characters are as old as the thirteenth or fourteenth century; but it would appear, adds Dr. Todd, that the ancient wax tablets or memoranda books "were in size and form very similar to ours; and, therefore, as far as form, size, and material can be considered a criterion, our tablets may be as old as the eleventh century." The wax leaves are coated upon both sides. Along with these curious objects are placed several fragments of the leather cover found along with the book, and which was curiously embossed.

Under the head of Species IV. may be enumerated three other articles connected with literature, Nos. 138, 139, and 140, in the Glass-case of the Eastern Gallery. The first is one of the ancient oaken covers of the Book of Lecan (an ancient Irish MS. preserved in the Academy). It is 13 inches long, 9 wide, and $\frac{1}{2}$ an inch thick, and is covered with thin leather, and studded with brass fastenings. It was—*Presented by Dr. Petrie*. No. 139 is the ancient cover of another Irish MS. No. 140 is a reading-stand, hinged in the centre by what is termed a knuckle-joint, and ingeniously constructed out of the same piece. It is $12\frac{1}{2}$ inches long, and 9 broad. It was found deep in a bog in the Rosses, county of Donegal, and—*Presented by Lord George Hill*.

SPECIES V.—DRESS AND PERSONAL DECORATION.

IN Rail-case E may be seen a few wooden pins and fibulæ found in crannoges, resembling in every respect some of the metal and bone implements used for similar purposes; and, as already stated at page 168, two wooden beads which formed part of a collection of such articles found in that at Ardakillin. But at no period, in any country, or in any state of society where harder materials could be obtained, have objects of personal decoration been formed out of recent vegetable productions.

All the articles of vegetable material connected with dress or personal decoration have been arranged in Rail-cases E and F. Following the small articles belonging to Class IV. may be seen fourteen pins, principally of yew and deal.

ORDERS II. AND III.—AMBER AND JET.

AMBER and jet, both of vegetable structure, have, wherever they were attainable, been employed in forming ornaments, such as beads, rings, bracelets, buttons, and fasteners, &c. The Academy possesses a very extensive collection of amber beads, amounting to four hundred and eighty, inclusive of the eleven alluded to in connexion with the crannoge beads already described at pp. 167 and 168. They vary in size from the smallest necklace bead to the largest specimen, which is $2\frac{1}{4}$ inches in diameter; and are nearly all of the globular form. The great bulk of them were obtained with the Dawson and Sirr collections, without any record of the circumstances or locality in which they were found. The Danish incursions were, in all probability, a fruitful source of such objects. Amber beads have been found amongst the personal objects in crannoges, and they are also said to have been found in ancient tumuli, but many were in modern use among the peasantry as prayer-beads.

JET appears to have been extensively employed in Ireland in the manufacture of decorative objects, and the Academy possesses sixty specimens, which are arranged in Rail-case F, and numbered from 1 to 60. They consist chiefly of necklace beads and studs, the latter perforated obliquely at the back, so as to form fibulæ or buttons. Nos. 21 to 25 are necklace beads, varying in size from $\frac{1}{2}$ to $\frac{3}{4}$ ths of an inch in diameter. No. 26 is a heart-shaped piece of jet, imperfect at top, but originally 2 inches long—*Presented by Lord Farnham*. No. 27 is a small heart of jet. Nos. 28 to 37 are ten jet studs or buttons, square, circular, or oval in shape, and varying in size from 1 inch to $1\frac{1}{2}$ in their greatest length, convex and polished upon the external surface, but comparatively rough, and perforated by a semicircular aperture upon the under surface, of which the accompanying illustration, Fig. 155, drawn from No.



Fig. 155. No. 31.



Fig. 157. No. 60.



Fig. 156. No. 44.

31, affords a faithful representation. They have been arranged so as to show the back and front in alternate specimens. Articles of this description could have been sewn upon garments, and may have been used as buttons or fasteners. The chief peculiarity of these objects consists in the large oblique aperture drilled in the back, and by which they might have been attached to clothes, have formed heads to pins, or were strung together into necklaces. We find the original idea of this oblique aperture in the shell ornaments of the very earliest period figured on page 183. No. 38 is a jet boss, of a button-shape, 2 inches in diameter, and perforated by a number of holes passing obliquely through the top, possibly for sewing it to a garment. No. 39 is a bead, much worn in the aperture, as if by being long pendant. Nos. 40 to 43 are four jet

rings, the largest $1\frac{1}{2}$ inches in diameter; No. 44, the next specimen, is a flat ring bead, $1\frac{1}{4}$ inches wide, having four leaden studs passing through it, either as an inlaid decoration or to prevent it splitting, a fracture appearing upon the edge. It is octagonal on the outside, and circular in the bore (see Fig. 156). Lead appears to have been the metal chosen for setting specimens of jet. Nos. 45 to 48 are four oblong or irregularly-shaped pieces of jet, perforated at the extremities, apparently for the purpose of attaching them to the strings of necklaces. Nos. 49, 50, and 51 are three oblong beads, the largest of which, No. 50, is shown by Fig. 157; it is 5 inches long, and $1\frac{1}{2}$ wide, and was originally burred at each end, but it now, as well as the two other beads of the same variety, exhibits the marks of long and continuous wear. A similar oval bead of stone is represented by Fig. 95, on page 122.

Large rings, bracelets, and armlets of jet, are not uncommon in collections, and have been found among the objects brought to light in investigating crannoges. Nos. 52 to 60 are nine specimens of this variety of ornament, and consist of fragments, or nearly perfect rings, of jet, varying in diameter from $2\frac{3}{4}$ inches to $4\frac{3}{4}$. No. 52 is unpolished, and was apparently in process of formation. No. 53 was found at Loughlane, in the county of Westmeath, and No. 58 at Ballyhoc Lake, county of Louth. It was—*Presented by the Board of Works*. No. 59 is semicircular, flat on one side, convex on the other, and perforated as if for sewing to a dress. It has also leaden rivets at the ends. No. 60 is the only one of the set now nearly perfect; it is $4\frac{1}{4}$ inches in diameter, and $3\frac{1}{4}$ in the clear, so that it may have been worn on the arm above the elbow. It had been fractured at one point, and was repaired by means of a silver plate or clasp. In Rail-case D may be seen the fragment of the large bracelet of jet found at Dowth (see page 167).

HORSE-TRAPPINGS. ORDER I.—WOOD.

HORSE-YOKES, as well as harness employed in working oxen and asses, follow next in succession; and of these, two specimens, No. 141, a wooden straddle, and No. 142, a two-horse yoke, both placed in the Eastern Glass-case, may be given as examples. This straddle, composed of two pieces of fir timber, each 17 inches long, by 8 broad, was found deep in a bog; similar implements are, however, still in daily use in remote country districts. No. 142, shown by Fig. 158, is an ancient horse or bullock-yoke, 3 feet 9 inches long, and 7 inches deep at the extremities, very ingeniously formed; there is an aperture in the centre, by which it was apparently attached to a pole, like that used in the modern curricule. Apertures also exist at either extremity of the lower end of the body, and likewise pass from above downwards through the curved extremities, which evidently overlapped the necks of the horses



Fig. 158. No. 142.

upon which it was placed. It was apparently too light an implement to have been employed in ploughing; and yet the great length of time which has elapsed since the chariot was in use among the early Irish rather militates against the idea of its having been used for that purpose. It was found in a very fragile condition* in a bog near Castle Leslie, county of Monaghan, and was—*Presented by Charles Leslie, Esq.* No. 143 is an “Exchequer Tally,” 3 feet 9 inches long.

* The form of this most curious implement has been preserved by saturating the wood with treacle and glue.

SPECIES VII.—MUSIC—HORNS.

THE oldest presentation made to the Academy's collection is a conical tube, No. 144, 6 feet 4 inches long, $3\frac{1}{4}$ inches in diameter at the bottom, and tapering to a point, where it was supposed a mouth-piece had been affixed. Horns of this description, but much shorter, are common in Switzerland and the Tyrol. It was—*Presented by Lord Viscount Dillon*, and an account of it by Ralph Ousley, Esq., was read to the Academy in 1791, and has been published in vol. iv. of the Transactions, from which the following extract is made:—“It seems to have been originally a solid piece, which in that state was split from end to end; each of the pieces into which it was thus divided was then hollowed or grooved on the inside, and tapering in such a manner that, when joined again, these grooves, applying to each other, formed a circular and conical perforation through the whole length, resembling that of a trumpet or horn. To secure the pieces in this position they were bound together on the outside by a long fillet of thin brass, about an inch and quarter broad, wrapped round them in a spiral from one end to the other, with upwards of an inch of interval between the rolls, and fastened to the wood with small brass nails. The ends were secured by circular plates, probably of the same metal, as appears from marks still remaining on the surface of the wood, these pieces having been lost.” A portion of the spiral brass plate still remains, and the instrument is in a state of good preservation. It appears to have been formed out of willow, and was found on the lands of Becan, barony of Costello, and county of Mayo, in August, 1791. According to the opinion of the author in the paper, it was one of the trumpets called in the Irish tales and romances “Benwoven or Buabhal, a military instrument used only on emergencies, and capable of producing a most tremendous sound.” The only difficulty in accepting this explanation exists in the exceeding smallness of the aperture at the

narrow end; but then it is possible that it may have been provided with a reed or mouth-piece, which produced the desired effect. "It lay horizontally in a turf bog, about nine feet from the surface. When taken up it was perfectly straight, but has since warped somewhat in drying. The wood is still very sound."

Of the same class of instrument, and apparently constructed upon the same principle, are four pieces of wooden tubing, each averaging 28 inches in length, and about 2 inches in diameter, and so constructed as to fit one into the other at their extremities. When placed together they would form a tube 9 feet long, and making two-thirds of a circle. They were formed, like the foregoing specimen, by first splitting the wood, then hollowing out the centre, and afterwards bringing the sides together. The most curious circumstance connected with this instrument is the mode in which the sides were ingeniously joined by copper rivets, many of which still remain. It is said that, when found, there was a thin, ornamented brass plate extending along the joinings. These tubes were discovered in 1837, in the bog of Killyfaddy, near Clogher, county of Tyrone, and were—*Presented by J. Huband Smith, Esq.*

HARPS.—As a flute, clarionet, or piano, depends for its tone more upon its wooden than its bone or metallic materials, so the harp may with propriety be placed among the objects composed of vegetable material. There are two harps in the Academy's collection, placed upon the top of the glass-case of the Eastern Gallery, Nos. 1 and 2; the former, shown in the cut on the next page (Fig. 159), is 5 feet 2½ inches high, and 2 feet 8 inches broad at the widest portion. It had thirty-six wire strings; the pins are iron, inserted into a brass plate. The plate upon the sounding-board is also brass. The head of an eagle has been carved upon the top of the key-piece, and the figure of a rabbit surmounts the lower portion of it. This harp was procured with the collection of the late Major Sirr, and is said to have belonged to a bard of the O'Neills;

but it is probably not older than 250 years. No. 2 is a smaller specimen, 4 feet 6 inches high, and 2 feet 7 inches broad. It had thirty-five strings, attached to brass pins.

No. 3 is a model of the ancient Irish harp in the Museum of Trinity College, usually called "Brian Boroihme's harp." According to Dr. Petrie, this is "not only the most ancient instrument of the kind known to exist in Ireland, but is, in all probability, the oldest harp now remaining in Europe." Mr. Ferguson thus describes it:—"From recent examination it appears that this harp had but one row of strings, and that these were thirty in number. It is 32 inches high, and of exquisite workmanship: the extremity of the fore-arm is capped in part with silver, extremely well wrought and chiselled; it also contains a large crystal, set in silver, under which was another stone, now lost. The whole bears evidence of having been the work of a very expert artist, and it is unquestionably the most ancient harp in existence."

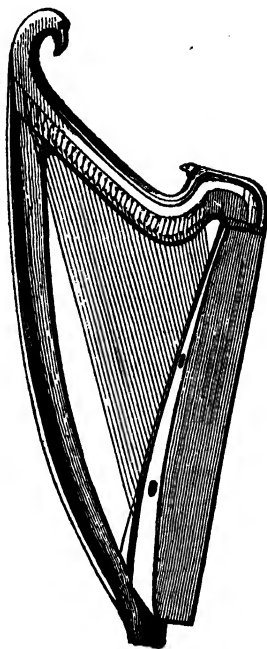


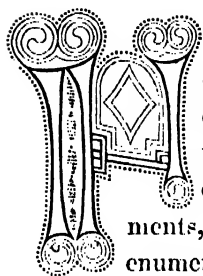
Fig. 159. No. 1.

For further description of the Irish harp, which was invariably strung with wire, the reader is referred to Mr. Ferguson's learned essay on the subject, in Bunting's "Ancient Music of Ireland," from which work the foregoing quotations have been made.

In the Moore Library, adjoining the Museum, may be seen the small modern harp belonging to the bard, made by Egan, of Dublin, which was presented to the Academy, along with his books, by Mrs. Moore.

CLASS IV.—ANIMAL MATERIALS.

EASTERN GALLERY, CASE III., AND WESTERN GALLERY, COMPARTMENT I.



THE foregoing sections we described the composition and localities of the different rocks out of which man fashioned his earliest tools and weapons; the earthen materials wherewith he decorated his person, formed culinary implements, or preserved the remains of the dead; and also enumerated the different trees and vegetable substances from which our early people formed their boats, paddles, mills, kneading-troughs, and drinking vessels, &c. This division of the Catalogue commences with a short notice of the native animals which ministered to man's necessities, or contributed to his amusements, in early times.

Man in his primitive state, depending almost solely on flint, stone, and wood, for his tools and weapons—the remains of which abound in Ireland, and are typified in the first and third sections of this Collection,—must have been originally, in a great measure, a flesh and fish-consuming animal. And it may naturally be inferred that he employed the hard bones as well as the softer horns and the flexible skins and warm furs of the creatures he slew, in the formation of weapons, tools, clothing, household utensils, and personal ornaments, as his wants required, or his ingenuity suggested. In the process of civilization he either tamed some of the wild animals, or introduced domesticated specimens from other countries. With those animals that may be considered pre-Adamite, we do not pro-

fess to deal,—they belong rather to the province of the geologist and palæontologist than to that of the antiquary; still the line of demarcation has not yet been accurately defined. Recent investigations tend to prolong chronology,—to extend farther back, towards the dawn of time, man's existence on the earth,—or to advance into coeval occupation with him many animals heretofore believed to have preceded him by centuries. Having described the different Irish animals associated with man, in the Proceedings of the Academy, vol. vii., p. 64 and p. 181, it is here unnecessary to do more than enumerate them.* ●

Of the ancient Fauna of Ireland, we as yet possess but imperfect knowledge. Among the larger carnivora was the bear, in Irish *mathghamhain*, probably the brown bear of northern Europe, and which existed in Scotland until the year 1057. Although said to be remembered traditionally, we have no historic reference made to it in any of our records. The majority of the bears' skulls discovered in Ireland show that the animal was of rather a small size, although the great cave bear coexisted here with the mammoth. The wolf, called in Irish *cú allaidh*, or the wild hound, and occasionally styled in the manuscripts *mac tíre*, the son of the soil (*filius terræ*), remained among our highland woods and caverns until the beginning of the last century. The ancient dog, or *cú*, usually called the Irish greyhound, and believed to have been employed in chasing the deer, or exterminating the wolf, may be said to have passed from amongst us. The fox, *sinnach*, or *madradh ruadh*, the red dog; the badger, *broc*; the otter, *dobhar-chú*, or water hound; the martin, or tree dog, *madradh crainn*; the stoat and weasel, *blúnait*, or *easóg*; and the wild and domestic cat, or *cat garman*, include nearly all the carnivora of Ireland in early times. To this list may be added the seal, or *rón*, which abounds upon our coasts.

* See also the Author's Papers upon "The Food of the Irish" in the Dublin University Magazine for 1854.

Of the deer tribe, our gigantic Irish Elk, the *Cervus megaceros* was the noblest animal of its class of which we have any remains, but whether it coexisted with man is a mooted question. We have no Irish name for this extinct animal. That a small and probably degenerated variety existed with the human race in Ireland, may be assumed from the circumstance of the remains of one being found in peat overlying the clay; and others possibly may have been discovered in similar situations. (See Proceedings, vol. vii. p. 198.) The red deer, *fiadh ruadh*, was evidently the animal of this class that bounded most in Ireland, and was the chief object of the chase. Other varieties of the deer kind were, no doubt, to be found in great quantities during the middle ages; but it may be questioned whether they had not been introduced about that time. We had the sheep, *caóra*, and the goat, *gabhar*, at a very remote period, the former being many-horned. Oxen, *daimh*, were undoubtedly to be found in the greatest abundance, and of the finest breed in Ireland, from the earliest period to which our histories refer, and were probably long antecedent to man's occupation of the island.* The horse, *capall*, or *each*, was coexistent with the elephant; and the wild boar, *torc fiadhain*, abounded in our woods up to a comparatively recent period. The hare, called in Irish *gearr-fiadh*, "the short deer," and occasionally *miol-muighe*, or "the animal of the plain," and the rabbit, *coinín*, were also co-occupiers of Ireland with man at a very early period.†

Numbers of localities in Ireland, as well as persons, derived their names from animals, or from historic circumstances connected with them. The chief wealth of this island has ever

* One of the oldest lists of the Animals of the British Isles is to be found in an Irish Poem in the Academy's Collection of MSS (S. 149); and a prose description thereof is related in the Book of Lecan. Mr. Curry thinks the original poem was written in the ninth century. See the transcript and translation of it in the Proceedings, vol. vii. p. 184.

† See the Author's Paper on the "Ancient and Modern Races of Oxen in Ireland," in the Proceedings, vol. vii., p. 64, also p. 209.

lain in its cattle, and our annals abound in notices of epizootics that from time to time raged among the lower animals. Barter was chiefly carried on by means of sheep and oxen. The tributes paid by chieftainries or kingdoms were, for the most part, in cattle; and several of the feuds that prevailed in early times originated in cattle raids, and usually ended in the stronger party abducting the flocks and herds of the weaker.

The next question for consideration is, how far the ancient animals of Ireland contributed materials for those manufactured articles, which, under the head of "Animal Materials," our Museum presents. It is the largest collection of its kind in any country in north-western Europe, and contains specimens of bone, horn, skin, hair, fur, wool, gut, and even wax, as well as of food, such as butter, cheese, &c.

One of the earliest uses of horn among the primitive inhabitants of Europe appears to have been contemporaneous with, and subsidiary to, the use of flint and stone. And, although we do not as yet possess any specimens of horn to illustrate this assertion, our Museum contains fragments of flint (see Rail-case ▲), and also small stone celts, which, judging by analogy with their ascertained uses in other parts of the world, must have been fixed in portions of stag-horn, most probably those of the red deer, in the following manner:—A piece of the hornbeam, from 5 to 8 inches in length, cut or broken off, generally where a tine sprung, so as to give it greater breadth, was hollowed artificially for the insertion of a fragment of flint or small sharp stone celt, which was then driven into the broad part and fixed there either with wedges or cement, or fastened with thongs. Sometimes the horn was perforated across the centre for the passage of a handle formed of some tough, hard wood, such as oak, yew, ash, or blackthorn. It thus formed an axe, pick, or adze, according to the shape and direction given to its cutting edge. The majority of these small tools were, however, held in the hand, and had not flexible handles. Occasionally the horn tine had the celt inserted at right angles to it, and thus formed both handle and socket.

This was, perhaps, one of man's earliest manufactures: a weapon-tool equally formidable in the former, or serviceable in the latter capacity. Several such pieces of horn are to be found in the native collections of north-western Europe, extending from the Danube to the highest inhabited limits of Sweden and Norway; and their use has been for a long time more than a matter of conjecture, but until lately very few specimens with the attached flint or stone blades have been discovered. The Swiss crannoges, especially those in the Bodensee, have, however, afforded so many examples of such within the last few years, as completely to clear up the mystery; and two of these are here figured, one-fourth the natural

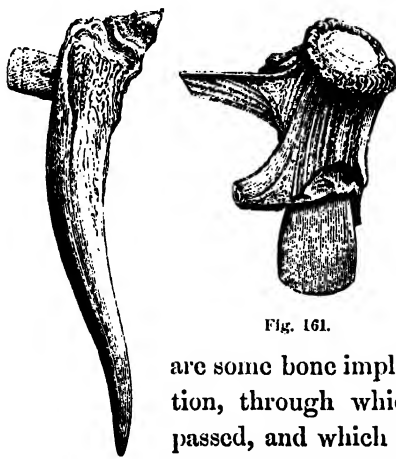


Fig. 160.

Fig. 161.

size, from unpublished engravings of the work of Professor Lindenschmit, of Mayence.* As yet none of these horn implements have come to light in Ireland, although we possess the stone blades in large quantities. In Mr. Murray's Museum at Edenderry there

are some bone implements of a different description, through which handles were evidently passed, and which served as picks or axes like those found in Jutland, and preserved in the Copenhagen Museum of Antiquities.†

By permission of Mr. Murray, the following illustration, Fig. 162, is drawn from the most remarkable of these Irish bone axes. It is 8 inches long, and was found 7 feet deep on an ancient wooden togher or road in Ballykillen bog, barony

* See "*Die Alterthümer unserer heidnischen Vorzeit.*"

† See the last edition of Worsaae's "*Nordiske Oldsager*," 1859, pl. 14.

Since the publication of Part I. of this Catalogue, a stone celt in a wooden handle was discovered in the Solway Moss, and is now in the British Museum. See "*Proceedings of the Royal Society of Antiquaries*," vol. iv. p. 112.

of Cootestown, King's County, along with the flint arrow-head figured at p. 254.* The sharp cutting edge at the small extremity was formed by breaking or cutting off the bone obliquely, like the end of the horn tine, Fig. 168, at page 260.



Fig. 162.

The foregoing illustrations explain articles in the Academy's Museum, the uses of which could not, without them, be properly understood.

The more we study man in his primitive simplicity, and collect examples of his arts, as still existing among savage people, the more we are driven to the conclusion that in certain phases of life and states of progress, he acts as if by a common instinct or impulse to fulfil the like purposes, provide for the same necessities, and prompted by similar desires, to follow the same stages of development, merely modified by climate, the natural productions of the country he inhabits—and by race; the latter influence coming into play as he rises from the self-supporting nomad to that condition where men live in community, and depend upon each other, not merely for the luxuries, but the necessities of life.

The deciduous solid horns of the deer tribe formed tools and weapons, and handles for all manner of implements, and were also employed in the manufacture of personal decorations; while the cuticular horns of the hollow-horned ruminants were applicable to many purposes, but were especially used for drinking vessels. It is strange that, compared with other countries somewhat similarly circumstanced—as, for instance, Scandinavia and northern Germany—so few of these vessels have come to light in Ireland. The great Kavanagh Horn in

* Geo. V. Du Noyer, M. R. I. A., presented to the Academy a valuable portfolio of drawings of objects in the Edenderry Museum, containing those of Figs. 162 and 164. (See Proceedings, vol. vii. for January, 1860.) The Author is much indebted to Mr. Murray for having forwarded, for his inspection and description, the bone-pick figured above, and the arrow-head given at page 254.

the Museum of Trinity College, although in the shape of the horn of an ox, is made of an elephant's tusk; and the Dunvegan cup (a work of Irish art already alluded to at page 114) is shaped like a methen, which was probably always the fashion of the Irish drinking vessel, as well as at the time when that particular article was made. Moreover, our oxen were nearly all short-horned, and did not afford materials out of which large drinking-horns could be manufactured similar to those found in the countries alluded to.

From the very earliest period down to the present day, man has availed himself of the skins of animals for various useful purposes, and soft, warm furs were used, as now, either for covering or decoration. Such peltry was procurable from several of the animals enumerated. The skin of the deer formed, perhaps, one of the earliest garments used by the natives of this country, and cow-hide, in either a raw or manufactured state, appears to have been very early employed for all purposes of household economy, wearing apparel, and horse-trappings. When letters were introduced, our numerous goats afforded the parchment that has embalmed the annals of Irish history, and the emblazonment of Irish art. Horse-hide and calf-skin covered our books, and leather formed satchels for our MSS.* The hair both of horses and goats was matted or woven into textures, either employed as coverings, or used as fringe for various decorative purposes: of which we possess an example in the Collection (see Fig. 188, page 295). Finally, wool became the chief material for man's clothing, long prior to the introduction of flax.

From the hard, long bones of quadrupeds were formed weapons, tools, and handles for both classes of implements; also fibulæ, pins, needles, piercers, bodkins, spindle-knobs, combs, draught and chess-men, musical instruments, and surfaces upon which was exercised the engraver's art. Besides the various

* See in particular the beautiful embossed leather satchel or case of the Book of Armagh, now in the Library of Trinity College, and figured in Petrie's "Round Towers," p. 329.

purposes to which bone was applied, and of which we possess illustrative specimens in the Museum, was that of the dart or arrow-head, shown in the accompanying illustration (Fig. 163), taken from a very perfect specimen in the Museum of Professor Nilsson at Lund,* and which is here introduced in order to



Fig. 163.

explain the uses of that large collection of small, thin, narrow flint-flakes, now preserved in Rail-case A (see also page 10), and the uses of which could not otherwise be understood. A smooth, sharp-pointed piece of bone, about 6 inches in length, was grooved on each side to about a quarter of an inch in depth. Into each of these grooves was inserted a row of fine, sharp-edged, and slightly-curved bits of flint, and fixed there by means of cement. The instrument thus armed was fastened to the end of a shaft of wood, which could either be thrown by the hand or projected by the bow-string.

Possibly some of the sinews, but certainly the intestines of animals, cleaned, twisted, dried, and oiled, were extensively employed in sewing, as well as for various other purposes to which twine and thread are applied in the present day. Both thong and gut probably assisted our primitive people in the construction of the sling. In the Edenderry Museum there is a flint arrow-head, remaining in a part of its briar-wood shaft, with a portion of the gut-tying still attached—as shown in the annexed engraving, reduced one-half the natural size, and here figured by permission of its owner, Mr. Murray. It was found, with the bone pick (Fig. 162), in Ballykillen bog, King's County.†



Fig. 164.

* See "*Skandinaviske Nordens Ur-Invanare*," 1843. A new edition of this work is in the press.

† This rare specimen, as also the bone pick figured at page 252, were exhibited at a meeting of the Academy on the 27th of February, 1860. See *Proceedings*, vol. viii. See also Mr. Du Noyer's portfolio, already referred to.

While the muscular flesh and cellular tissues afforded food, no doubt the fats were melted down, and served for the lamp that hung in the rude dwelling of the peasant, or the banquet-hall of the noble. At the banquets of the ancient Irish, special parts of the slaughtered animals were apportioned to particular classes; of which fact we have a notable example in the description of the feast in the *Teach Midhchuarta*, or great banquetting-hall of Tara, given by Dr. Petric in vol. xviii. of our Transactions.

Of the remains of such cetaceous animals as frequent our coasts, we possess only one specimen—an engraved book-cover formed out of the blade-bone of a whale, deposited in the Museum by Joseph Huband Smith, A. M. The mildness of our climate, and the great fertility of our soil, as well as the fact of our woods affording such abundance of game, and the rivers and inland lakes abounding in fish, may account for the circumstance that no antique implements of the harpoon class have yet been found in Ireland. The incinerated bones of birds have been found in urns and tumuli; and recent manufactured specimens may be seen in the Museum.

Of fish, as an article of food, we have frequent mention, especially salmon (*eo*, *bradun*, or *maighre*), which, according to the earliest annals, abounded in our rivers, particularly the Boyne; but fish-bone does not seem to have been employed in the arts by our ancestors.

Bees, *beacha*, were cultivated in Ireland so extensively, and at so early a period, that a large portion of our ancient Brehon laws is devoted to providing for their care and preservation; and their waxen products, found in square masses, and in the form of candles, have been discovered under circumstances which leave no doubt as to the great antiquity of such articles.*

The nature of the materials presents some difficulty in grouping all these articles, composed of animal substances, ac-

* Giraldus Cambrensis states that the abundance of the yew, and the winds and rains in Ireland, injured the bees.—Book I., chap. v.

according to the secondary division of this Catalogue, for the uses of some are still undetermined, yet, with a few exceptions, they can all be brought within the limits of the classification which has been adopted. All the manufactured articles of bone and horn, except a few in Rail-case **H**, have been attached to two large Trays, **A** and **B**, at the extremity of the Eastern Gallery; to Tray **C**, in the first Compartment of the Southern Gallery; and to the "Find Trays," **A**, **B**, **C**, in the Southern Compartment of the ground floor of the Museum.

The great object and value of an antiquarian collection is to fill up that blank in history, which, while telling of cosmical phenomena, political events, religious procedures, invasions or expeditions, wars, battles, and famines, the feuds of tribes, or the personal revenge of chieftains, has left the social history of primitive man a still unwritten page. These substantial memorials of the past illustrate, with unerring certainty, that history, by revealing man in his domestic life, his manufactures, dress, decorative arts, and household economy, from the earliest times. As such, they cannot fail to assist the future Irish historian to draw pictures of society at those epochs to which they are referable. It must be borne in mind that there is a long period in Irish history undescribed by any annalist, in which the rath, the cromlech, and the stone sculptured monuments, the terra-cotta urn, the golden ornament, the flint, stone, and bone weapons and tools, and the early copper and bronze articles of the same class, were common—but of which no historian has made mention. Of this Pagan period there is no written history, and it is only by a careful study of the still existing monuments throughout the land, and of the articles in a collection such as that of the Academy, and by comparing them with kindred objects in other countries, that we can form any conjecture as to the social state of Ireland during the Druidic or pre-Christian period. It is not too great a stretch of imagination to suppose that, as our early annalists were Christians and ecclesiastics, they left unrecorded all notice of the

religion that it was their object to obliterate, and all records of the habits of a people among whom they were missionaries; merely preserving the genealogies of kings, with notices of the battles, eclipses, plagues, &c., derived from the bards that supplied them with their only means of information.

ORDER I.—BONE, HORN, &c.

SPECIES I.—WEAPONS.

ALL flesh-eating people, in the rudest states of society, and before they arrive at a knowledge of metal, have at hand ample materials for forming weapons either for war or the chase in the long bones of animals, which, by being broken obliquely, scraped by a sharp flint, or rubbed down on a hard, rough-grained stone, could be easily fashioned into daggers, and, by means of their central cavity or narrow hole, fastened on sticks or poles, so as to form darts or spears formidable to either man or beast. But the great length of time which has elapsed since such objects were used precludes the possibility of many of much antiquity remaining to the present day. Still, one of the oldest specimens of Irish handicraft in the Museum is the bone fibula figured and described at page 183, and which was undoubtedly an object of much value either anterior to, or at a time when the people of Ireland practised cremation and urn-burial, and were apparently unacquainted with metal. The few bone weapons which we possess were probably made and used by a people who lived when and where metal was known, but to whom such was not always accessible; in the same way as pins and fasteners of bone were employed by the poorer classes contemporaneously with the use of the same description of articles of bronze or silver by the wealthier and higher ranks.

Subsequent to the introduction of metal, bone and horn were employed, as occasionally in the present day, in forming handles and ferules for swords and daggers, &c. Next to

wood and sharp-edged stones, the bones of animals presented to man, in his half-civilized state, the most suitable material for such weapons as daggers and the heads of spears, darts, and arrows, &c.

DAGGERS AND SPEARS.—The top row of Tray A, in the End-case of the Eastern Gallery, consists of forty articles of bone or horn, the majority of which are evidently weapons or tools. One of the most remarkable specimens is the central



Fig. 165. No. 20.



Fig. 166. No. 21.



Fig. 167. No. 30.



Fig. 168. No. 31.

object, a bone dagger, No. 20, shown in the foregoing cut (Fig. 165), and formed out of the leg-bone of one of the larger ruminants. It is $10\frac{1}{8}$ inches long, of which the rough handle is only $2\frac{1}{2}$; thus confirming the opinion (deduced from the size of the hafts of our bronze swords) that the hands of the race who used them were very small. The blade is smooth, and brought to a very fine point. This unique specimen was found in the bed of the River Boyne, a short distance below Clonard, in the townland of Ballyronan, county of Kildare, "on hard blue clay, four feet under sand, along with some stone spear-heads of about 9 inches in length, and half an inch in thickness." It and No. 21 (Fig. 166) were—*Presented by the Board of Works*. See *Proceedings*, vol. v., Appendix, pp. 35 and 54.

No. 21, in the same row, on Tray A, is a bone spear-head

of a dark-brown colour, $9\frac{3}{4}$ inches long, and about $1\frac{1}{4}$ in diameter (see Fig. 166). It also was found 4 feet below the bottom of the river at Ballyloughlan, barony of Kilcoursey, King's County. It appears to have been formed by cutting off obliquely a portion of one side, and is traversed by rivet-holes for securing it to the handle. Nos. 30 and 31, Figs. 167 and 168, shown by the accompanying illustrations, are circular conical spear or arrow-points, and belong to the same class of weapon, but are smaller than No. 21. The latter (No. 31) is decorated with a chevron pattern like that on some of our oldest cinerary urns and gold ornaments, &c. They were manifestly fastened to handles of some description, as the sockets and rivet-holes still remain. The first is $2\frac{1}{2}$, and the last 3 inches long.

The handles of metal daggers and swords were partially formed of bone and horn, as shall be explained under the head of "Bronze Swords."

The antique shields of all early nations are, owing to the perishable materials of which they were composed, of great scarcity. Those belonging to the early Irish, and to which reference is made in our histories, were circular, and probably constructed partially of leather and wicker work, but as yet no vestiges of any such have been discovered.

SPECIES II.—TOOLS.

Picks and hammers composed of bone and horn, like that figured at page 252, have been discovered in Scandinavia; but one of the most primitive implements of this description which has yet come to light in Ireland is a hornbeam of an immense red deer, not shed, but apparently artificially worked off below the crown, see Fig. 169 on the next page. Its small extremity has been sharpened by some clean-cutting instrument, probably metallic. It is twelve inches long, is of great density, weighing as much as nineteen ounces, is of almost stony hardness, and the cancellated structure is filled with carbonate of lime to a greater extent than ever occurs in the living bone. It has, in fact,

undergone, to a considerable extent, the process of mineralization,—certainly far more so than we find in many specimens of the great Irish fossil deer; and as it was evidently worked by the hand of man prior to the commencement of its chemical alteration, it shows us to what a very remote period we may with safety refer it, and some of the tools and weapons which modern investigations have brought to light in other countries. This very rare specimen of a wrought mineralized bone, was found deep in the excavations made in the River Shannon, on the north side of Banagher Bridge in 1843, and was—*Presented by the Shannon Commissioners.* See No. 1, in Rail-case **H**.



Fig. 160. No. 1.

The numerous fragments of bone and horn found in crannoges and street cuttings, show how much these materials were used in the arts. Many tips of deers' horn in the collection are evidently the sawn-off ends of portions used, in all probability, in forming handles to swords, knives, daggers, and tools of various sorts; but others are decorated, and some perforated either at the end or at one side, so that they were evidently employed for some distinct purpose. Besides the well-determined weapons described and figured at page 258, we find in this Collection a number of handles of bone and horn, and a few of ivory, for affixing to tools and food-implements. Some of these hafts are not inelegantly decorated, particularly Nos. 2, 10, and 14, on Tray **A**.

KNIVES (in Irish, *sceana*), being employed for a greater variety of purposes than any other implement in either ancient or modern times, and being used indifferently as weapons, tools, and food implements, might with propriety be placed in any of the three first species in the Classification adopted in this Catalogue; still, they find a more appropriate place among the Tools. We find two kinds of knives here: in one the animal material is employed in the construction of the han-

dles only; and in six of these articles on Tray **A**, from Nos. 11 to 16, small iron knife-blades, evidently of a very rude construction, and ancient fashion, are still fixed. The second variety is formed altogether out of bone, such as Nos. 8, 9, and 10, on Tray **A**, and No. 319, on Tray **B**; No. 10, which is 8 inches long, and highly decorated on the handle, and a portion of the blade, is represented by the accompanying wood-cut, Fig. 170. It was found with a great



Fig. 170. No. 10.

many other specimens of manufactured bone in the Ballinderry crannoge, county of Westmeath. Crannoges have, indeed, been the chief source from which have been collected most of those small implements connected with ancient household economy, domestic use, or personal decoration, contained in the Academy's Collection, and preserved either under the head of "Animal Materials," or kept together as types, among the "Finds" hereafter to be described. The soft substance which formed the substratum of these lake-fortresses, as well as the circumstance of many of them having been rifled of their more precious contents, or remaining uninhabited for years, until the waters rose above their surface levels, may account for the preservation of such a number of these small articles. Crannoges were also small towns or villages, in which, no doubt, the artisan plied his trade with greater security than he could upon the mainland. From street-cuttings, or excavations made for sewage, &c., in the city of Dublin, numbers of small bone and horn articles have been obtained.

To the top row of Tray **A** have been affixed several curved tines of stags' horns, some hollowed at the base, and all bearing the marks of having been artificially pointed. Similar objects,—tools, or weapons in either a rude, partially worked, or finished state,—are of frequent occurrence in crannoges and street-cuttings. In length they vary from 2 to 8 inches. Nos. 36, 37, and 38, are skewer-like pieces of bone, rasped

sharp at both ends, and somewhat resembling the Collection of wooden pins described at page 200.

Upon Tray **B** has been arranged another collection of these bone-tips (see Nos. 1 to 32). Nos. 22 to 26, inclusive, are flattened and notched on the concave surfaces, of which No. 24, here figured one-half the natural size, affords a good example. As to what their use may have been—whether as guards to the finger in straining the bow-string, or like those employed in the present day by hatters for chucking the sheep-gut string of the bow in felt-ing wool—it is difficult to determine.*



Fig. 171. No. 24.

There are other objects in this Collection formed of bone and horn, with the precise uses of which we are at present unacquainted. When, however, the turner's art was introduced, numberless were the forms given to bone and horn, as may be observed in the present day. Under the head of Tools may be classed spikes and piercers, available for a great variety of purposes. The following Catalogue gives a detailed account of the articles belonging to the foregoing species, and displayed upon the top rows of Trays **A** and **B**.

SHELF I., Tray A—Miscellaneous bone and horn articles, Weapons, Tools, &c., from No. 1 to 40. No. 1 is a hollow, dark-coloured bone haft, $5\frac{3}{8}$ inches in length. No. 2, ditto, with a double aperture at top, stained black, $5\frac{1}{2}$ inches long, ornamented by spiral and interrupted grooves. No. 3, a bone handle, 4 inches long, much worn at one end. No. 4, ditto, $3\frac{3}{4}$ inches in length. All these, together with Nos. 18 and 40, were found in Lough Gurr, county of Limerick. Nos. 2, 18, and 40 were—*Presented by the Hon. Sophia O'Grady*. No. 5, a plain bone handle, $3\frac{1}{2}$ inches long. No. 6, ditto, ornamented, $2\frac{5}{8}$ inches long. No. 7, another bone handle, $2\frac{3}{4}$ inches

* One of the most ancient remains of animal material referred to the "Stone Period," and preserved among the flint collection of the Copenhagen Museum, is a horn tine, notched on the concave edge, precisely similar to those in the possession of the Royal Irish Academy, but somewhat larger.

long, from Ballinderry crannoge. No. 8, a single piece bone-knife, $6\frac{5}{8}$ inches long, ornamented. No. 9, a similar instrument, $5\frac{3}{8}$ inches long, slight, and with a pointed handle. No. 10 (Fig. 170, page 261) is an ornamented bone-knife, which came into the collection along with—Nos. 110 and 114, among the pins on this Tray, and those stone specimens in RAIL-CASE B, described at page 120. All these, together with No. 11, an ornamented handle $4\frac{5}{8}$ inches long—were found in the Ballinderry crannoge; No. 11 was—*Presented by Doctor Lentaigne*. Nos. 12, 13, and 14 are bone knife-handles, averaging $3\frac{1}{2}$ inches long, and having short iron blades still attached. No. 15, a bone knife-handle, highly ornamented, $4\frac{1}{2}$ inches long, with an iron blade 5 inches in length, sharp at the point, and thick in the back. No. 16 is of the same character, but is of ivory. No. 17, a short ivory handle, with a narrow knife-blade, 4 inches in length. No. 18, an ornamented handle, $4\frac{3}{8}$ inches long. No. 19, a large black bone pin, 9 inches long (see Fig. 224), found in the bed of the Shannon at Grosses Island, near Carrick-on-Shannon, in July, 1847, and—*Presented by the Shannon Commissioners*. No. 20, a bone dagger, described at p. 258 (see Fig. 165). No. 21, a bone spear-head, ditto (Fig. 166). No. 22, a similar small bone spear-head, 4 inches long, found in the crannoge near Cloonfree, county of Roscommon—*Presented by Alonzo Lawder, Esq.* (see Proceedings, vol. v., p. 219). No. 23, ditto, $5\frac{1}{2}$ inches long, was procured with the Dawson Collection, and said to have been found at Garristown, county Dublin. No. 24 is $5\frac{3}{8}$ inches long. No. 25, a bone dart, $6\frac{1}{2}$ inches long. No. 26, a bone spear, similar to the foregoing, $5\frac{1}{2}$ inches long. No. 27, ditto, $5\frac{1}{2}$ inches in length. No. 28, ditto, $4\frac{3}{4}$ inches long. No. 29, ditto, 5 inches long. No. 30, a conical bone point (see Fig. 167, p. 258). No. 31, ditto, ornamented (Fig. 168). No. 32, a solid and apparently unfinished horn tip, similar to the foregoing, $2\frac{3}{4}$ inches long. No. 33, a curved piece of deer's horn, $5\frac{1}{8}$ inches in length, hollowed in the base. No. 34, ditto, $5\frac{3}{4}$ inches long. No. 35, a tine of deer's horn, $6\frac{1}{8}$ inches long, hollowed at the base. Nos. 36, 37, and 38, three skewer-shaped pieces of bone, pointed at both extremities, and varying in length from $3\frac{1}{4}$ to $7\frac{1}{2}$ inches; found at The Cutts, near Coleraine, county of Derry—*Presented by the Board of Works* (see Proceedings, vol. v., p. 417). No. 39, a metacarpal bone (Fig. 225, p. 344). It appears to have been part of a musical in-

strument. No. 40, the shank-bone of a sheep or goat, $8\frac{1}{4}$ inches long, stained black, highly polished, and perforated at one end. Of the foregoing articles, Nos. 24 to 29, also 33, 34, and 35, were discovered in the crannoges of the lakes in the vicinity of Strokestown, county of Roscommon, and, except 25, 28, and 29, were—*Presented by the Board of Works*. For the remainder of Tray **A**, see pp. 273, 335.

SHELF II., Tray B—Contains 303 miscellaneous Bone and Horn Articles,—Tips, Burrs, Pins, Plates, and Whorls, &c. No. 1 is a tine of deer's horn, $3\frac{7}{8}$ inches in length. No. 2, a horn tine, $3\frac{1}{2}$ inches long, from Lough Gurr. No. 3, ditto, artificially shaped, $2\frac{5}{8}$ inches in length. No. 4, ditto, ditto, $3\frac{5}{8}$ inches in length; found with No. 7 in Christ Church-place, Dublin. No. 5, ditto, $3\frac{1}{2}$ inches long; from a rath at Ennisnag, county of Kilkenny. No. 6, a goat's horn, $2\frac{5}{8}$ inches, hollowed artificially at the base. No. 7, a horn tine, $3\frac{1}{8}$ inches. No. 8, ditto, $2\frac{5}{8}$ inches, slightly ornamented. No. 9, ditto, $3\frac{1}{8}$ inches. No. 10, ditto, $3\frac{3}{8}$ inches. No. 11, ditto, $3\frac{1}{8}$ inches, polished at top; from Dunshaughlin. No. 12, a portion of bone, $4\frac{3}{8}$ inches in length, found as No. 5. No. 13, a knife-handle, $3\frac{1}{8}$ inches. No. 14, a bone piercer, ditto. No. 15, ditto, $3\frac{1}{2}$ inches. No. 16, ditto, $5\frac{1}{2}$ inches. No. 17, a small bone, $4\frac{1}{8}$ inches long, from Lough Gurr. No. 18, a bone spike, $4\frac{5}{8}$ inches long. No. 19, a tine of deer's horn, slightly ornamented, $2\frac{3}{8}$ inches long. No. 20, ditto, $2\frac{3}{4}$ inches, plain. No. 21, ditto, $2\frac{5}{8}$ inches. No. 22, ditto, $2\frac{3}{4}$ inches, flat, with indented notches. No. 23, ditto, ditto, $2\frac{5}{8}$ inches. No. 24, ditto, 3 inches long, slit at the base (see Fig. 171, p. 262). Nos. 25 to 32 are horn tines, varying in length from $2\frac{1}{2}$ to $4\frac{1}{2}$ inches long; some in process of manufacture. All these, from No. 19, except 24 and 25, were found in a deep cutting in the formation of a sewer in Christ Church-place, Dublin.

On this Tray are three antler crowns or burrs (Nos. 186 to 188) which may have been either used as tools or as rings in horse furniture; also carved pieces of bone, resembling modelling tools, for the description of which see the continuation of Tray **B** on page 274.

SPECIES III.—FOOD IMPLEMENTS.

DRINKING-HORNS,—in Irish, *cuirn*, from the Latin *cornu*, and also *cuacha*,—cups or goblets, come in to this category; but it is

to be regretted that, although there is evidence to show that the Irish excelled in the formation and adornment of vessels of this description (examples of which have been already alluded to at page 114, and to which numerous references may be found in early Irish writings), the only horn vessels at present possessed by the Academy are the small circular and square drinking-cups, Nos. 1 and 2, in the lower Compartment of the last Glass-case; and No. 3, in Rail-case **H**. The accompanying illustration is drawn from No. 2, a mether-shaped drinking-vessel, $4\frac{3}{4}$ inches high, and $2\frac{1}{2}$ wide at the top, ornamented by dots, punched or burned into the horn. The pine bottom was inserted when the horn was soft, into a groove similar to that in a mether.



Fig. 172. No. 2.

No. 1 is a circular horn goblet, with a bottom of the same material, let in like that in No. 2. It is $4\frac{3}{4}$ inches high, by 3 wide at top, and is ornamented with raised rims; the handle was fastened to the vessel by iron rivets. It was found in the parish of Tamlaght O'Crilly, in the county of Derry. No. 3, in Rail-case **H**, is a very small four-sided drinking-vessel of horn, only $2\frac{1}{2}$ inches high, but similar in shape to No. 2; found at Dunshaughlin.

Besides cattle, bondsmen and bondswomen, steeds, cloaks, hounds, shields, swords and armour;—drinking-horns, are enumerated among the chief tributes paid to the Kings of Erin, as set forth in *Leabhar na g-Geart*, or Book of Rights. The original of the poems in that work are said to be as old as Binninnus, the immediate successor of St. Patrick in the See of Armagh, and, in their present state, may be fairly considered as ancient as the ninth century. Mention is there made of the following forms:—"Drinking-horns, with handsome handles, curved drinking-horns, inclining drinking-horns, horns for carousing, drinking-horns for the banquet, drinking-horns for distribution fully prepared, drinking-horns for quaffing mead, variegated drinking-horns, with their peaks; drinking-horns

of various colour;" and also, "drinking-horns, on which is gold," which the King of Gacla, in Ui-Maine, brought with him to the banquet of Cruachain. In the Annals of the Four Masters, and also in those of Clonmacnoise, it is stated that King Tighearnmas, to whom the art of smelting gold and dyeing colours is attributed, was the first "who caused standing cups to be made"—probably drinking-horns with feet, like that figured below. In one of the sculptures upon the short cross at Monasterboice there is a representation of a sitting figure, holding a long curved drinking-horn to the mouth.*

In the central Glass-case of the Southern Gallery stands a very accurate model of the celebrated Charter-horn in the Museum of Trinity College, usually known as the "Kavanagh Horn." The original, from which the accompanying illustration was taken, is carved out of ivory; it measures 22



Fig. 173.

inches along the convex edge, and is $4\frac{1}{2}$ across the open of the mouth. It presents sixteen sides or faces, and stands upon a pair of brass legs, fastened above into a brass collar, and terminating in birds' webbed feet. Moveable hinged plates pass along the concave and convex margins, between the middle and the upper collar band. All these metal portions were

originally gilt. The end terminates in a ferule; a decorated brass plate surrounds the top, and bears the following inscription:—

TIGHEARNMAS O'TAVAN JAE FECIT, DEO GRACIAS. E. B. S.

Vallancey, who published a drawing of this in 1784, says: "It was the property of Thomas Kavanagh, Esq., of Ballyborris, in the county of Carlow, who has generously added it to the

* See the Author's "Beauties of the Boyne and Blackwater," second edition, p. 303.

College Collection." (See "*Collectanea de Rebus Hibernicis*," vol. iv. p. 25, pl. 4.) The model in the Academy's Museum was—*Presented by the late Dr. R. Ball.*

Wherever cuticular horns are accessible spoons have been formed out of them, and such are still in common use in many places; but one of the rarest spoons, composed of animal material, which has come down to the present time, is that shown in the accompanying cut, drawn two-thirds the natural size, from one of two articles of this description, formed out of the concave epiphyses, or joint surfaces of the vertebrae of some large mammal. It



Fig. 174. No. 21.

is almost of the natural shape, but has been slightly cut away on one of the edges, so as to form a short handle, which may have been inserted into a piece of bone, horn, or wood. This and its fellow, No. 22, in Rail-case H, were found in the crane of Tonymore, between Crossdoney and Cavan. (See Proceedings for 23rd Jan., 1860.) A bone knife and fork, Nos. 358 and 359, are affixed to Tray C, see p. 338.

BOG BUTTER, CHEESE, AND WAX.—Under this species may also be classed food itself, the most remarkable examples of which in the Museum are the specimens of bog butter, the finest of which, No. 37, standing in the centre of the first compartment of the Southern Gallery, has been already described and figured at page 212.

The substance called bog butter, or "mineral tallow," has been found in the peat in various parts of Ireland, and is supposed to have been buried for safety, as well as to give it a peculiar taste and consistence, which it derived from being converted into a hard yellowish substance like *adipocere*, or old dry Stilton cheese. It is usually found in single-piece wooden vessels, somewhat like methers or long firkins, as in No. 37.*

* See the author's notice of Bog Butter in the Proceedings of the Academy, vol. vi. p. 369, where the various authorities bearing on the subject are referred to.

It was first noticed as a curiosity in Ireland in 1736, and has also been discovered in the Færoe Isles, and in Scotland. It is usually found at a great depth, and in old solid bogs, in which it was originally placed, or through which it sank in lapse of years, after being deposited either for security, or to produce a certain chemical change, and consequent alteration in flavour, and, probably, in durability. Besides No. 37, the large specimen alluded to, there are several examples of this animal material in the lower compartment of the last glass-case in the Eastern Gallery.*

No. 37 was found 9 feet below the surface in Grallagh-bog, near Abbeyleix, Queen's County, and was—*Presented by Lord De Vesci*. No. 38, a hard, yellowish-white substance, like old Stilton cheese, and in taste resembling spermaceti, is contained in a large, square, thin methers, apparently intended originally for a butter or milk vessel; it is 9 inches high, and 5 across, of willow, and double-handled. It was found in Ballyconnell bog, county of Donegal, 15 feet below the surface, and—*Presented by Dr. Nolan*. (See methers, No. 62 A, p. 216.) No. 39 is a small specimen of bog butter, purchased with the Dawson collection. No. 40, another small specimen of the same material, but apparently more recent. No. 41, a large specimen of bog butter, found 18 feet under the surface, in the county of Kilkenny; presented by William Walsh, Esq., to the Royal Dublin Society, and by that body deposited in our Museum. It was probably from this specimen that Professor E. Davy made the analysis of this peculiar substance, published in the Proceedings of the Royal Dublin Society for 1826. No. 42 is a fragment of the foregoing article.

CHEESE (*cáise*).—While bog butter is always found in wooden vessels, specimens of cheese of great antiquity have also been discovered in our bogs, unconnected with vessels of any

* In the lower compartment of this case is a wooden model of a stone coffin, presented by Dr. Walsh, and referred to at p. 185. It is 2 feet long, 8 inches deep, and 10 wide, and contains a quantity of incinerated bone, chiefly human, found in tumuli, and presented at different times to the Academy.

kind. Cheese differs in shape from the ancient butter, and bears upon its surface the impress of the cloth with which it was surrounded in the press. There are two examples of ancient cheese in the collection—No. 43, a globular, and No. 44, an oblong, brick-shaped specimen.

No. 43, a globular mass of cheese, very light, dry, and crumbly, and more like Stilton than the other specimen in the Collection. The top surface bears the mark of the cloth with which it was pressed, and it has also some leaf-marks upon it. No. 44 is an ancient cheese of a brick colour, $7\frac{1}{2}$ inches long, by $3\frac{1}{2}$ deep, marked all over with the impression of the cloth, which appears to have been of a much finer texture than that employed with No. 43. It has a raised cross on one side, evidently derived from the press, and at the ends may be seen the marks of the folds of the cloth.

WAX (*céir*).—With the specimens of bog butter in the end of the Eastern Gallery is a cake of pale yellow bees'-wax, No. 45; it is 7 inches long, 2 thick, and is believed to be antique. It formed a portion of Mr. R. C. Walker's collection, and was—*Presented by the Duke of Northumberland.*

SPECIES IV.—ARTICLES OF HOUSEHOLD ECONOMY, FURNITURE,
DOMESTIC USE, AND THE TOILET, ETC.

UNDER this head we find piercers, needles, bodkins, combs, spindle and distaff-whorls, of bone and horn, all of which are attached to the Trays placed in the End-case of the Eastern Gallery. The three first varieties of articles enumerated in this species find many representatives among the Collection on Trays **A**, **B**, and **C**, but are (except Nos. 79 and 81 to 84, on Tray **A**) with difficulty separated from the pins used as fasteners or for personal ornament.

COMBS—in Irish *ciora*.—Below the pins on Tray **A** is arranged a collection of forty-four combs, in either a perfect or fragmentary state, numbered from 116 to 172. From their shape it is evident they were used more for toilet purposes than as ornamental objects; indeed, we have not as yet met

with any ancient combs in Ireland specially used for holding up the female hair. If the hair was plaited, it was, in all probability, fastened as well as decorated with a bodkin of bone or metal. We have no warrant for supposing that the early Irish were acquainted with the manufacture of such horn combs, nor were they likely to have had much knowledge of ivory, or the use of tortoise-shell; and there is no evidence to show that our females, in early times, retained the hair in position by means of a comb of any kind, the introduction of which fashion is modern. The Irish, both males and females, were celebrated for the length to which they wore their hair (hence called *glibbs* and *cuil-fion*); and it is not unlikely that the latter sex adopted the fashion of plaiting it. (See Walker's "Essay on Irish Dress," and also Lady Moira's paper in the "Archæologia," vol. vii., referred to at p. 326.)

The combs in the Academy's collection may be divided into three varieties,—the long rack-comb, the single fine-tooth comb, and the double fine-tooth comb. The first vary in length, from No. 123, which is about 4 inches, to No. 120, Fig. 175, which, judging from the half that remains of it, must have been 10 inches: in breadth they range from half an inch to $1\frac{3}{4}$ inches. With the exception of Nos. 135, 136, and 137, which appear to be ornamented pocket-combs, there are no specimens in this collection formed out of a single piece. The sides of these rack-combs are generally hog-backed, and taper from the centre to the extremities, the great majority of them being highly decorated, many with pleasing patterns. Between these sides are set the pectinated portions, varying in breadth from half an inch to an inch and a quarter, according to the size of the bone out of which they were cut, the whole being fastened together with metal pins, generally brass, riveted on each face of the side. The back of the pectinated portion generally rises above the handle in the centre and at each extremity, as may be seen in the following illustration, Fig. 175, restored from the remaining half of No. 120, which

must have been 10 inches in length, and $1\frac{1}{2}$ wide. These toothed portions are in separate pieces, on account of the grain of the bone, as well as the cavity in its centre: for it is manifest that a durable comb of this size could not have been cut out of a single bone without great liability to fracture. By this ingenious

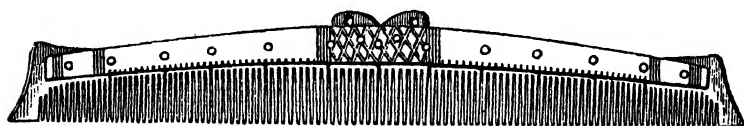


Fig. 175, No. 120.

contrivance, also, the pectinated portion, if worn or broken, could easily be repaired by driving out a rivet in the side pieces, withdrawing the injured part, and inserting a new toothed portion.

The accompanying illustrations, drawn two-thirds the natural size, present us with two beautiful specimens of the short one-sided or single fine-tooth comb, and both of which are highly decorated. No. 137, on Tray A, fig. 176, is $2\frac{1}{4}$ inches long by $1\frac{1}{8}$ deep, and formed out of a single piece.

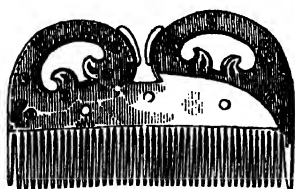


Fig. 176, No. 137.

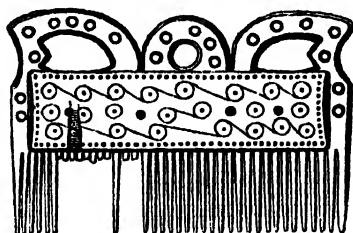


Fig. 177, No. 159.

Its decoration chiefly consists in its graceful outline, and the number of dotted lines and circles upon its sides. The three elevated rivets projecting above the toothed portion fastened metal plates, which, either in the original formation, or when the article had been accidentally broken, were attached to it. Figure 177, drawn from No. 159 in Rail-case

H, numbered in continuity with the combs on Tray **A**, is the finest specimen of its class in the Collection. It is $2\frac{1}{2}$ inches long, and $1\frac{1}{4}$ deep, and the three pectinated portions are held together by flat sides, decorated with scrolls and circles. The top or handle shows a triple open-work decoration, and the side pieces are grooved at one end for receiving the clasp of a metal tooth, which replaced one of the lost bone ones. It was procured from the Ballinderry crannoge (see Proceedings, vol. vii., p. 129).

The third variety resembles very much the modern fine-tooth comb, and generally varies from 3 to $4\frac{1}{2}$ inches in length, and from $1\frac{1}{4}$ to $2\frac{1}{4}$ across, the teeth portions being double, and passing through and through the sides to which they were riveted. The specimen, here figured two-thirds the natural size, is a good example of this variety. The tooth part was originally in five pieces, and fastened between the sides with metal rivets.

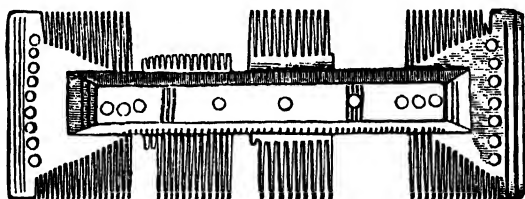


Fig. 178. No. 149.

No. 140, which more resembles a modern comb than any of the others, has a copper ring inserted into one extremity, by which, in all probability, it was attached to the person.

In some specimens may be seen brass teeth inserted where those of bone had given way, thus showing that at the time, or in the locality where such repair was made, brass was either easier worked or procured with greater facility than bone.

The Academy's Museum is particularly rich in combs; the crannoges of Dunshaughlin, Ardakillen, and Cloonfinlough, and the street cuttings in the city of Dublin, have afforded nearly all the specimens of which the localities have been recorded. The total number of combs at present in the Collection, including those on the "Find Trays," is eighty. Many of these

combs are but fragmentary; yet, in each a sufficiency has been preserved to enable us to judge of the original size, and also of its style of ornamentation, which generally consists of transverse or oblique grooves, diced-work, interlacings, dotted lines, and circles surrounding a central indented spot. For particulars respecting these articles, see the following details:—

SHELF I., Tray A.—The long rack-combs are placed above, the double close combs below, and the small pocket ones in the centre. No. 116 is a portion of a long rack-comb. No. 117, the complete back of a comb, $5\frac{3}{4}$ inches long. No. 118, ditto, nearly complete, $5\frac{1}{2}$ inches long; the pectinated portion rising above the back at the ends. No. 119, ditto, was, with Nos. 121 and 126, found in excavations made in Christ Church-place, Dublin. No. 120, Fig. 175, page 271, now $5\frac{1}{2}$ inches long, is little more than half the original size; it, as well as Nos. 140 and 142, were procured from the Strokestown Crannoges. No. 121 is complete in the back, and $6\frac{1}{2}$ inches long. No. 122, a small, perfect specimen, 4 inches long, was, together with Nos. 118, 135, 136, 137, and 149, procured from the Crannoge of Lagore, near Dunshaughlin. No. 123, a portion of rack-comb, $5\frac{3}{4}$ inches long. No. 124, the back portion of a rack-comb, much curved. No. 125, a perfect back, $4\frac{3}{4}$ inches long. No. 126, a fragment of a rack-comb. Nos. 127, 128, and 129, ditto. No. 130, one side of a back, complete. Nos. 131, 132, and 133, are fragments of single combs. No. 134 is the fragment of a long comb, with remarkably fine, narrow teeth, only $\frac{1}{4}$ of an inch long. No. 135 is a portion of a pocket-comb, like No. 137. No. 136, a pocket-comb, $1\frac{1}{8}$ of an inch long, by $1\frac{3}{4}$ high, with a semicircular and decorated top. No. 137 is from Lagore, figured at p. 271. No. 138, a portion of a rack-comb. No. 139, ditto, narrow, and repaired with brass teeth at one end. No. 140, a portion of a double comb (p. 272), found with No. 141, in the Ardakillen Crannoge. Nos. 141, 142, and 143, are portions of double combs; the last was found in the bed of the River Glyde, county of Louth (see Proceedings, vol. vi. p. 179), and —*Presented by the Board of Works.* No. 144, a perfect double comb, 3 inches long, and $2\frac{3}{8}$ broad, with a brass ring attached to one extremity; it was found in the Crannoge of Loch-Laoghaire, near

Clogher, Co. Tyrone, in 1845, and—*Presented by the Earl of Enniskillen*. (See Proceedings, vol. v. p. 215; also a notice of that Grannoge at p. 231 of this work.) No. 145, a double-comb, very rude, and having the side piece indented, either by long use, or from combing very coarse hair. Nos. 146, 147, and 148, are imperfect or fragmentary portions of double combs. No. 149 is the best specimen of double ornamented comb in the collection, and presents an entirely different pattern from any of the foregoing. (See Fig. 178, p. 272.) No. 150, a large, imperfect, hog-backed rack-comb, ornamented on the sides, and found in a deep excavation in Fishamble-st, Dublin. Nos. 151, 152, and 153, are fragments of rack-combs; the last, together with No. 156, was found in a street cutting in Castle-street, Dublin. Nos. 154, 155, 156, and 157, are fragments of rack-combs. No. 158, a portion of a double comb, ornamented, the teeth much worn; found at Lackanash Hill, between Trim and Navan, county of Meath, and—*Presented by The Very Rev. R. Butler, Dean of Clonmacnoise*. (See Proceedings, vol. vi., p. 171).

The other articles on this Tray are enumerated at pages 262 and 235.

SPINDLE WHORLS, *cúigéala*,—of bone, and numbered from 274 to 280, occupy a central position on the last line but one of Tray B, and resemble those of stone already figured and described at page 115. In one of these, No. 274, here figured two-thirds the natural size, a portion of the lower end of the bone spindle still projects. Of the remaining six, Nos. 276 to 279 are notched, and worn round their central apertures, as if by the passing of threads. They are all more or less decorated, and average $1\frac{1}{2}$ inches in diameter. For the particulars of other articles on this Tray, see the following description:—



Fig. 179. No. 274.

Tray B, already described at page 264, contains articles of bone and horn, consisting for the most part of stag-horn tips, mantle pins, decorated bone plates, spindle whorls, draftsmen, counters, and a number of miscellaneous articles, the precise uses of which have not yet been determined. The top row consists of tines or ex-

trema points of deers' horns, some in the rude state, and others decorated at top and bottom. A few, particularly Nos. 22 to 26, are flattened on the sides, and notched on the concave surface. These were probably tools. (See p. 262.) From No. 33 to 185 are bone-pins, described under the head of "Personal Decoration" at p. 331. In the centre are four circular disks (Nos. 186 to 189), the three first being burrs of stags' horns, smoothed and polished upon the inner surface of the rings, the largest measuring 3 inches in diameter. The last is a circular piece of a scapula; the perforation in the centre is smaller than in the three first; it and No. 186 were found at Lagore, county of Meath, and No. 187 was dug up at Christ Church-place, Dublin. (See p. 264.)

Beneath these rings are three long bone articles (Nos. 190, 191, and 192), apparently tools, possibly for netting or modelling, the longest being about 9 inches. Each is perforated in several places, the holes being surrounded by rings, as in the bone plates and other small articles alluded to at page 342. No. 193 is a bone spoon, 5 inches long.

The other articles on this *Tray* are enumerated at pages 264 and 336.

SPECIES V.—DRESS AND PERSONAL DECORATION; HORSE TRAPPINGS, ETC.

HAVING at the commencement of this section glanced at the various animals by which the primitive Irishman was surrounded, and which either ministered to his wants in food, gratified his vanity in the decoration of his person, or contributed to his amusements; and reviewed the various animal products employed in the early state of the arts, as exhibited by this Collection, we now proceed to the consideration of animal substances—in clothing and decoration. Under this head come skin and leather coverings of all descriptions, and for every part of the body, with their necessary fasteners, such as straps, pins, and buttons, also hair and woollen fabrics, together with pendants, necklaces, and other decorative objects. Notwithstanding the perishable nature of

such materials, undoubtedly the two oldest specimens of personal decoration (except those of amber), in the Collection, are the bone fibula and shell necklace, found, with cinerary urns and human skeletons in the tumulus, in the Phoenix Park, already described and figured at p. 183. The fibula is enlarged at both ends, and was probably employed in fastening the hair. It, and the necklace, undoubtedly coexisted with flint weapons, the practice of cremation, and interment within cromlechs and tumuli, long anterior to the metal age.

SKIN AND LEATHER DRESS.—Before the art of weaving was known, probably before wool was introduced, we can picture to ourselves man clad in garments of the skins of large ruminants, such as deer or oxen, but particularly the former, which, from their fineness, flexibility, and strength, as well as the character of the hair, would be the most suitable as articles of dress. Ledwich truly observes: "It may fairly be affirmed, the most ancient Irish dress of which we have any certain account was barely a skin mantle, which the Welsh also used; this was afterwards changed for a woollen one" (*Antiquities of Ireland*, p. 260); but the author does not give any reference to that "account." We are not, however, left here altogether to conjecture, or forced to draw analogies from the habits of half-civilized man in other countries at the present day, for a human body, completely clad in a deerskin garment, was found in a peat-bog, on the lands of Gallagher, near Castleblakeney, county of Galway, in the year 1821, and was for many years exhibited in the Museum of the Royal Dublin Society. Unhappily, only a few fragments of this most interesting dress now exist, and they form a portion of the valuable Collection lately deposited by that Society in our Museum. Rail-case H, No. 5. Portions of the seams still remain, and are creditable specimens of early needlework. The material employed in sewing was fine gut, of three strands, and the regularity and closeness of the stitches are most remarka-

ble, as shown by the accompanying cut, in which a bit of one of the joinings is represented double the natural size. This closure was effected by what is termed the looped stitch, similar to that used in working a button-hole, so that, by having each stitch knotted, the chance of ripping was lessened.

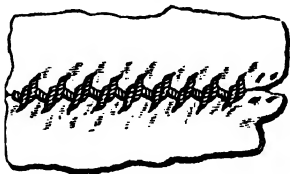


Fig. 180. No. 5.

Examined under the microscope by Mr. Queckett, this skin and hair, some of which latter still remains, is found to be that of the deer, but of what species could not be determined. The body, as well as the dress, was, when first discovered, quite perfect, but, having been disinterred at different times for the inspection of the curious, the clothing was very much injured before it was deposited, eight years afterwards, in the Dublin Society's collection. It was found ten feet below the surface, in a small dry bog, surrounded by pasture land. The head, legs, and feet were uncovered, but the body was enveloped in the skin tunic, which reached to the knees and elbows, and was laced in front by thongs of the same material.* The body was immediately replaced by those who first found it, but exhumed a few years afterwards, and finally taken up in 1829, and deposited in the Dublin Society. It was said to have been six feet high, apparently of a person of about thirty years of age, and, when discovered, had the teeth, long dark hair, and even the partially grown beard, perfect. Had it and its skin dress, in Irish *cochall croichinn*, been preserved in its original state, no museum in the British Isles could boast of a more valuable specimen, nor one more conducive to the advancement of ethnological science. The foregoing circumstance is illustrative of the neglect of our na-

* See Dr. Petrie's paper in the Dublin Philosophical Journal, vol. i., p. 433, 1825; and the letter of Mr. A. O'Kelly, of Tycooly House, to the Royal Dublin Society in 1829,—in the Proceedings of that Institution, vol. xlv., Appendix to Report of Feb. 12, 1829.

tional antiquities, or of investigations into the true history of the Irish race, until a very recent period.*

Even in the rudest states of society, sharp flint knives; such as those described in Section I., could skin the animal and fashion the garment, while a fine bone piercer or needle, and a leather thong, or the twisted intestines of the same creature, would form sewing materials, long before the use of vegetable fibre, or even wool, was known in Ireland. From the same untanned material, defences for the feet were formed. It is stated in the old bardic tale of the *Táin bó Cuailgne* that Loegh, the *ara* or charioteer of the hero Cuchulainn, was clothed in a tunic of deer-skin. Giraldus Cambrensis, writing in the twelfth century, relates a story, on the authority of some sailors who were driven on the Connaught coast, that they met two men in a long, narrow, oblong boat, covered with hide, stitched together on the outside. They were, he says, "naked, except that they were girded with loose belts of untanned hides of animals," and they stated that they used no clothes except those of skins, and that they lived altogether on flesh, fish, and milk.—*Topographia Hibernia*, p. iii., c. 26. This statement has, however, been questioned by Father Stephen White, in his "Apologia pro Hibernia."

The earliest head-dress was also, in all probability, of skin, but of what shape we have now no knowledge; it is, however, probable that the peltry of hares, rabbits, dogs, and other small animals, being highly decorative as well as useful, was employed not only for head-gear, but other ornamental purposes. A skin skull-cap, covered with dark fur, and perforated round the edge by a double row of holes, may be seen in the first Compartment of the Southern Gallery (see No. 4). It formed a portion of the valuable collection of the late Mr. R. C. Walker, when purchased by the Duke of Northumberland, and—*was presented by his Grace.*

* For a description of the body which this dress surrounded, and which is now preserved in the Academy's Museum, see the Section on Human Remains.

Although a complete skin costume, such as that now used by Esquimaux, must have given place, at least in several articles, to textile fabrics, at the commencement of the Christian era, yet skin or leather garments, chiefly cloaks, are alluded to in our early histories. They must have been in common use during the great frost of A. D. 942, when *Muircheartach Mac Neill, Prince of Aileach*, surnamed "Murtagh of the Leather Cloaks," in making his celebrated circuit of Ireland, by that great forced march in which his army never slept twice in the same place, clad his warriors in long leather cloaks, or outer garments, which not only protected them from the severity of winter during the day, but were also employed as tents at night. It is said that there was not a man lost in that campaign.*

Upon the coast where seals abound, their skins were probably used by the natives for clothing. When the country was more than half covered with wood, and the mountain passes and rocky fastnesses afforded secure retreats to the wolf, the fox, the badger, the martin, and probably the squirrel, and the river's banks swarmed with otters,—their warm furs afforded the natives, in great plenty, a means of clothing and decoration, not now procurable except by importation. Even long after the great bulk of our forests had been submerged in bog, or were cut down, peltry formed a considerable article of traffic, and also a portion of our exports;† and all the Irish chieftains, down to the seventeenth century, of whom we have any picture or accurate description, appear to have been decorated with fur.

We can imagine the transition from the complete covering of the figure with untanned skin in the earliest state of

* Leather cloaks, in Irish *Cochall Croicoinn*. See O'Donovan's translation of "The Circuit of Ireland, by Muircheartach Mac Neill," published by the Irish Archaeological Society.

† As many as 169 otter-skins were claimed by the English Exchequer at Dublin in 1408, from the representative of the family of Gillamochalmog, as arrears of his rent for Radon. See Gilbert's "History of Dublin," vol. i., p. 233.

society, to the time when buff coats, with or without mail, leather caps or helmets, belts, and military accoutrements, buckskin breeches, ornamented leggings, together with sandals, shoes, and every variety of boot, gaiter, gauntlet, and glove, again clad the figure with its primitive materials,—but in a manufactured state. As, however, we have had no Froissart in Ireland, and as yet possess but little accurate knowledge on the subject of our early national costumes, we have no means of tracing the steps by which this process took place.

Skin and leather, in the Academy's Museum, are, for the most part, represented by sandals, shoes, and buskins, of which we now possess one of the most extensive collections of its kind extant. They are attached to Trays **D**, **E**, **F**, and **G**, in the End-case of the Southern Gallery.

SHOES AND BOOTS, of what may be termed antiquity, present, upon a close examination, several curious artistic details and ingenious devices. When the Irish first learned the art of tanning, is at present unknown; but as this branch of manufacture is of great antiquity in most countries possessing any degree of civilization, it is not likely that we were unacquainted with it during historic times.* Most of the specimens in the collection are evidently made of tanned leather, and are also considerably worn; but a few are of untanned hide. As nearly all the antique objects of skin were discovered in peat-bogs, to the tanning properties of which they were subjected for so many years, it is now difficult to state with precision whether each article was originally tanned or not.

For the sake of arrangement, these articles of dress may be divided into the single-piece shoe or buskin, and that in which two or more pieces were employed in its fabrication. To understand the antique single-piece shoe, it is well to in-

* See an extract from one of the Brehon Laws relating to the penalties for stripping bark for tanning purposes, given as a specimen of the Irish language in the fourteenth century in O'Donovan's "Irish Grammar," p. 448.

quire whether anything approaching thereto is worn in the present day. In the western islands of Aran, the majority of the people wear a sort of mocassin or slipper of untanned hide, which envelopes the foot for about an inch and a half all round, and is tightened by means of two pieces of cord, the one lacing up the toe-part, and the other the seam at the heel. The string from the latter passes through loops along the inside, and that in front by the outside, to the instep, round which they are then fastened like a lady's sandal. These flexible coverings to the sole and edge of the foot formed out of the fresh hide, with the hair externally, after a short time assume a certain degree of firmness, while they adapt themselves to the form of the wearer's foot. They are admirably suited for climbing the precipices, and progressing upon the great stone fields of these islands, and are, perhaps, the most ancient remnant of the aboriginal Irish dress which has come down to modern times. The name given to these foot-covers by the islanders is *Pampoota*, which is not Irish, nor, as might be expected, Spanish, but resembles the German word "Pampoosheen," a galosh or warm shoe-cover. It is, in fact, the *pantoufle*, a low shoe or slipper laced to the foot, analogous to the Latin *solea*, "a sandal or slipper covering only the sole of the foot, and fastened with laces." There are two pairs of modern pampootas in the collection, one purchased many years ago with the Dawson collection, and which have been placed for exemplification as Nos. 1 and 2 on Tray D. The second pair, Nos. 24 and 25, on Tray F, were purchased by the Author of this Catalogue from one of the islanders, during the recent ethnological excursion of the British Association to Aran in 1857. They are made of untanned calfskin, the strings or latches being formed of fishing-line.*

* " Froissart, in his account of Edward III.'s expedition in 1326, tells us that ten thousand pairs of old worn-out shoes, made of undressed leather, with the hair on, were left behind by the Scotch on that midnight retreat which baffled the English, and terminated the inglorious campaign."—Planche's "History of British Costume." It does

Although vegetable material, flax, hemp, or pegs, are now used in the manufacture of boots and shoes of the strongest description, the oldest coverings for the feet which antiquity has brought to light were sewn together, and also laced to the foot with thongs or straps of leather. Sewing with a thong, however, has been in use in the manufacture of the *brog*, or rude unbound shoe of strong cowhide, commonly called “kip,” up to recent years, as for such purposes it was much more durable than the waxed-end of hemp or flax; and, swelling or collapsing according to the state of dryness or moisture of the material it united, it formed a much more durable fastening than either of the latter. Both brogues and pumps, the latter made without a welt, and turned after the sole was attached, were usually sewn with a thong.

In the accompanying illustrations are shown two forms of thong-closed, single-piece shoes. Fig. 181, No. 6, on Tray D, is a large shoe of strong, tanned leather, 10 inches long, gathered round the toe in full plaits by means of a flat thong,

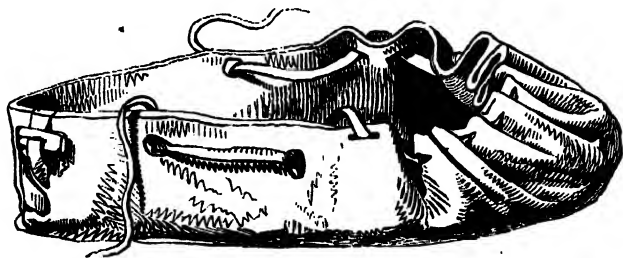


Fig. 181. No. 6.

on the principle of the pampoota; but the fulness of the gathers in front resembles the cloth or velvet round-toed shoe worn in the time of Henry VIII. The back seam is closed by a broad thong, ingeniously fastened, as shown in the accompanying cut. This very ancient shoe was found in a bog near

not appear that Froissart was ever in Ireland—whatever his *Chronicles* contain respecting this country, was derived second hand from Henry Castide, whom he met in France.

Roscrea, county of Tipperary, and was presented by the Hon. A. Prittie to Dean Dawson, with whose collection it came into the Academy's Museum. Of the same variety, but smaller, and evidently belonging to a different class of society, is the single-piece, thong-laced shoe, No. 23 on Tray F, figured below, and found on the foot of a female discovered in a dry bog at Castlewilder, county of Roscommon. It is now $7\frac{1}{2}$ inches long, and was laced with thong in front and behind. The front seam is elegantly plaited, and must origi-



Fig. 182. No. 23.

nally have come high up on the instep. This specimen is of much thinner material than that employed in any other ancient shoe or buskin in the collection, and it appears to have been bound round the ankle with the leather thongs, which closed the seams, after the fashion of the pampoota sandal. It is said that the body from which this curious relic was removed was clothed in a woollen garment, had an abundance of long, black hair on the head, and was decorated with golden ornaments. From the mystery attending this discovery, and the endeavour to conceal the body, the latter statement is not improbable.

Still forming the shoe out of a single piece of leather, and without any attached or additional sole-piece, a double step in advance seems to have been made contemporaneously: that of closing the seams by their flat edges instead of overlapping or intermixing them, and also of carving and decorating the surface of the leather, as shown in the annexed representation drawn from No. 11, on Tray D. To effect the former object, gut* (*ionnathar*) was introduced, and with this substance all the other single-piece shoes in the Collection, except those

* This has been proved by macerating portions of the sewing of every shoe in the Museum, in which it was employed.

already shown to have been kept together with thongs, have been sewn. Moreover, this description of shoe was evidently closed upon a last, stitched by what is termed grafting, and then turned. The front seam is now so very close as to form a regular zigzag pattern, produced, no doubt, when the leather was wet, and each side drawn so tightly as to indent the op-

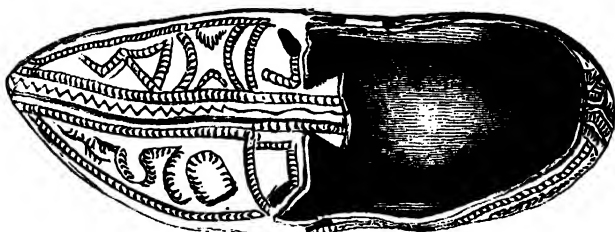


Fig. 183. No. 11.

posite edge. This shoe is pointed in the toe, and has a triangular piece of the sole-portion turned up to form a round heel, which, as well as the quarter, is also decorated with a regular pattern. There are oblong holes cut out of the sides, for attaching sandals to. Nos. 10 and 13 are decorated shoes of this description, although presenting great variety in ornamentation.

Of the double, or many-piece shoes or buskins, the two following examples will suffice. Figure 184, from No. 22, on Tray **E**, is the upper of a curiously formed and decorated

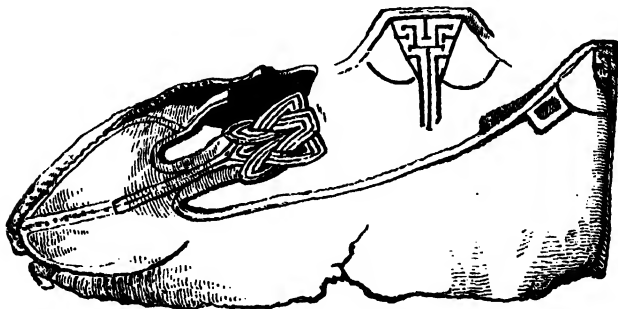


Fig. 184. No. 22.

shoe, 10 inches long, of dark, well-tanned leather, and differing in shape from any of the foregoing, being cut down as

low as possible in front, and rising about 4 inches over the heel. It is formed of one piece, sewn on the inside with gut, and has the longest quarter of any shoe in the Collection. The square apertures at the back were intended for laces, and the upper edge of the part above the heel is decorated with an angular form of ornamentation, which is shown to advantage in the separate drawing on the foregoing woodcut. The front of the upper is cut out very low down, but has an ornamented flap $2\frac{1}{2}$ inches long, and an inch wide, decorated with a twisted device, carved out of the substance of the leather. A comparison of this beautiful interlacement (which partakes of the character of that form of ornamentation displayed in some of our early manuscripts, crosses, and shrines, and which may be styled the *Opus Hibernicum*) with the rude, irregular decoration represented by figure 183, shows the great advance in art which had taken place between the periods when these two specimens of leather work were made. The toe-piece presents a semicircular cut carried round in a heart-shape, where, probably, a portion was taken out, and the edges sewn together with fine gut, so as to turn up the extremity like an oriental slipper. It was found in a bog at Carrigallen, county of Leitrim, and presented to the late Dean Dawson by the Hon. and Rev. J. Agar.

In No. 13 the toe-piece of the upper is decorated with an open-work pattern, which passes through the leather. In No. 8 we find the transition from the leather-sewing to that effected with gut, with which the hind seam is closed, while the front lacing is accomplished with a thong.

So far as the means of closure is concerned, a third stage came into fashion, apparently long prior to the use of flax or hemp, and was that in which the seams were closed by woollen threads, of which we have examples in Nos. 16 and 17, on Tray E. Whether shoemakers' wax, or any such adhesive material, was employed in sewing leather with a woollen thread, cannot now be determined.

Among the many-pieced, gut-sewn coverings for the feet' besides those already described, we possess two strong leather buskins, or half boots (*coisbheirt*), Nos. 19 and 20, on Tray F, the former of which forms the subject of the accompanying illustration. It is of thick, coarse leather, of a tan or dirty-yellow colour, similar to

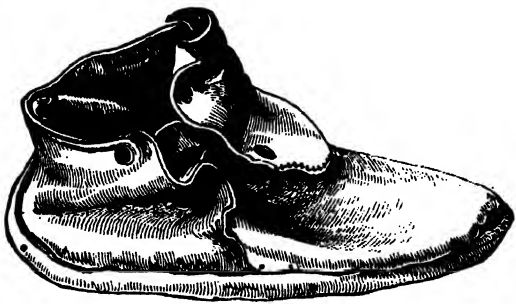


Fig. 185. No. 19.

that of the boots worn in Madeira and the islands of the Canary Archipelago. It is now 11 inches long, and was formed on the plan of a turned pump, with a double sole: both, however, together with the upper and welt, being included in the same stitch. A long triangular heel-piece, carried up from the sole, is ingeniously inserted between a slit in the upper, as in some of the very rudest single-piece shoes, so as to give a comfortable rotundity to that part. A large flap overlaps the instep, the loops for fastening which still remain, and a stout piece of thong is stretched across the angle between the vamp and upper to prevent breakage or straining. It was found in 1790 in a bog in the townland of Belladrihid, parish of Ballisadare, county of Sligo, and—*Presented by the Duke of Northumberland*, who purchased it with the collection made by Mr. R. C. Walker.

A fourth period in the progress of leather-working dates from the introduction of vegetable material, such as flax or hemp, for closing the seams, and consequently, so far as such an artificial arrangement is concerned, brings down the art to the present time. As an exemplification thereof, the accompanying illustrations of a very curious pair of double shoes are presented, drawn from Nos. 24 and 25 on Tray F, and here

shown, both in profile (Fig. 187), and upon the sole aspect (Fig. 186). These represent a pair of right and left shoes, very curiously made, and united by a double strap of the common sole, each about 2 inches long, and 1 wide. This sole consists of a single piece, and is attached to the uppers without the intervention of a welt, after the manner of a turned pump. The heel, which is the first

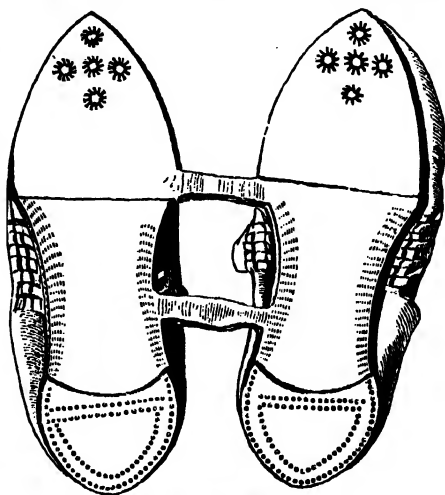


Fig. 186. Nos. 24 and 25.

instance of such that occurs in the Collection, is composed of several plies of leather, fastened on with pegs. The upper in each shoe is formed out of a single piece of thin leather, grooved, tooled, and embossed like cordovan; the quarters are double, the inside leathers being open behind, and the only seam in the upper is a delicate grafting with thread along the front of the toe-piece. This continuity of upper is well seen in the right shoe, but there are three seams in the left, apparently from a defect in the leather. In each quarter it slopes from the point above the heel, where it is 3 inches high, to its junction with the front, about

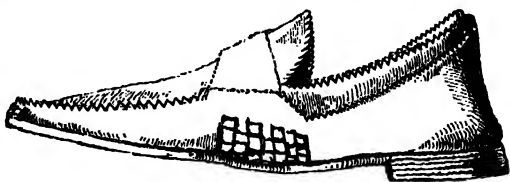


Fig. 187. No. 24.

the middle of the foot; and the entire border is mitred or pinked. A toe-piece, or ornamented vamp, passes all round the edge of the upper, which it overlaps, and interlaces with the back portion at its free scalloped edge. Not the least curious part

of these shoes is the ingenious mode by which the uppers are attached to the soles by a double thong, showing wonderful perfection in the art of stitching. These shoes were probably turned after one half of the soles were attached. Where the fronts and quarters join, at the point where the double back runs into the ornamental over-lapping of the upper, there is an open-worked or interlaced strapping, about 2 inches long, and 1 broad. They are said to have been found, wrapped in a piece of leather, in the rampart of a fort in the parish of Kill, near Cootehill, county of Cavan, about forty years before they were purchased by the Academy, in 1843. During the interval they remained in the roof of a peasant's cabin, near the place where they were discovered. They are evidently much more modern than any of the foregoing, except the pampootas. Conjecture as to the use of these marvellous specimens of the Crispinian art might suggest the possibility of their having been used as inauguration shoes by the chieftains. Certain stones used at that ceremony in ancient times still exhibit the indentations in which the feet were placed on such occasions. These shoes are worthy of examination as a curious instance of the ingenuity of the maker, like shirts woven without a seam, and many other similar examples of handicraft.

Besides the specimens of leather-work referred to in the foregoing description, there is a collection of ladies' old-fashioned slippers and high-heeled shoes of the seventeenth and eighteenth centuries, worthy the attention of the curious, as illustrative of the strange extravagancies in costume, from the length and narrowness of the heel, which in some of these articles excites our wonder as to the possibility of progression on such slender and unnatural points of support. The following is a detailed list of all the shoes and buskins composed of animal materials in the Collection:—

SHELF I., Tray D, Single-piece Leather Shoes and Sandals, Nos. 1 to 9.—Nos. 1 and 2 are modern pampootas, described at p. 281. No. 3 is a single-piece buskin, 9 inches long, imperfect, laced much higher

up than the modern pampoota, and fastened by leather thongs before and behind, but which did not encircle the instep. Like most of the other ancient single-piece shoes in this Collection, this seems to have shrivelled considerably, yet never could have belonged to a large foot. There are still some traces of hair upon the outside of the skin. No. 4 is a single-piece shoe, 9 inches long, of thick leather, with the side on which the hair was, placed externally. Thick, firm, and in good preservation, it is laced before and behind with a round thong; the latter took a purchase for an inch along the edge of the upper before it closed the seam; the front lacing continued high up upon the instep. No. 5 is similar to No. 4, but smaller, being only 8 inches long, and it is not laced quite so high up in front. The hind thong is ingeniously knotted at both extremities by being passed through holes in itself. Both these shoes were found "several spits deep in Drummacoon Bog," county of Cavan, and were—*Presented by Lord Farnham*. Like all the other specimens on this *Tray*, the external face of the hide is placed outwards. No. 6, Fig. 181, is described at p. 282, No. 7, a left single-piece shoe, 9 inches long, laced with a thong at both heel and toe; the front seam collects the upper into gathers; and there is no apparent means of fastening the thong. There are two lateral holes in the quarters, apparently for attaching laces to. The heel is ingeniously protected at the lower edge of the seam by a heart-shaped piece, which is made to overlap the end of the joining. No. 8, a small single-piece shoe of strong leather, much corrugated, 7 inches long, laced up the front with thongs, which also passed round the edge of the upper, and gathered it round the instep. These strong flat thongs remain attached, and that in front has a loop at one end for fastening the knotted tying to. The back seam is closed with gut, this being the first shoe in this arrangement in which that material was employed. No. 9, a single-piece left buskin, 9 inches long, having but one seam, that in front, which was laced over the instep with a thong. The thick, soft leather is deeply indented by the seam which puckered it when the skin was fresh. It was found in Cartronawar Bog, county of Longford; and was—*Presented by the Rev. Dr. Martin*.

Tray III, Decorated and sewn Leather Shoes and Boots, Nos. 10 to 18.—No. 10, a single-piece left shoe, 9 inches long, much worn in the sole, and closed behind and in front with gut, so very tightly that

the seam presents an indented or zigzag appearance, produced when the leather was wet and soft. The upper overlaps the instep by an ornamental flap, like a modern slipper, and a triangular piece of the sole, carried up round the heel, is attached with great accuracy to the upper, and gave a roundness to that part; the toe is rather pointed. It is highly decorated all over the upper and a portion of the quarter. Although formed altogether of one piece, both this and the following were evidently lasted and grafted. They are right and left shoes, but not fellows. It was found in a turf bog, 7 feet beneath the surface, between the trunk and branch of a tree at Ballymacomb, near Bellaghy, county of Derry, and was—*Presented by Miss Alexander*. (See Proceedings, vol. iii., p. 541.) No. 11, a single-piece shoe, similar to the foregoing, and highly decorated (see Fig. 183, p. 283). It is $9\frac{1}{2}$ inches long, and $5\frac{1}{2}$ from flap to point of toe. No. 12, a single-piece right shoe, 10 inches long, with projecting flap. It is sewn in front and at the heel with gut; an oval piece overlaps the heel at its junction with the sole. The front seam presents a number of gathers, by which the leather was drawn into its present shape when soft; the edge of the upper is notched all round. It is made of soft, tanned leather, and was found in the Castle of Tullamore, Queen's County. No. 13, a single-piece left shoe, of the pampoota shape, round-toed, with an open-worked front, so that it was evidently not intended to keep out the wet; it is closed with a thong both in the back seam and along the open-work, and was laced to the foot with a leather sandal, a portion of which still remains; in the upper edge of the quarters, near the heel, are longitudinal slits, through which these tyings were passed. It is now 9 inches long; appears to have been much worn; was found deep in the Bog of Buggaun, parish of Ballymore, near Moate, county of Westmeath, and—*Presented by Mr. Hayes*. (See Proceedings, vol. vii., p. 160). No. 14, a right single-piece shoe of thick, tanned leather, with a pointed toe, sewn with gut, both along the triangular flap over the heel, and in the overlapping in front, which is gathered in by a seam of beautiful workmanship, in which there is an interlacement of the material itself, like No. 12. It is now $9\frac{3}{4}$ inches long, is in good preservation, and was also found in the Bog of Buggaun, and—*Presented by Mr. Hayes*. No. 15, a remarkable two-piece right shoe, 11 inches long, of thick leather, the anterior

and posterior portions being joined across the middle of the sole, by grafting with gut from the inside. It is also sewn with gut up the front, and at the heel, where the lower edge of the seam is overlapped by a portion cut from behind, and fixed to the quarter by a leather thong. Nos. 16 and 17, a pair of shoes, right and left, each 9 inches long, of thin, well-tanned, and apparently glazed or varnished leather, of a yellowish colour. The upper of each is of one piece, joined on the inside of the quarter; the sole is composed of many pieces, and attached to the welt by woollen threads. The stitching at the edge of the sole includes four plies,—the sole, insole, welt, and upper; and in some parts the welt is double. The right and left shoes in this instance are well marked, and evidently belonged to a person with small feet; they appear to have been intended more as a protection in walking and for ornament than to keep out the wet. The upper edges of the back and vamp bear marks of sewing, and are said to have been attached to the trews or pantaloons, in connexion with which they were found. Where the quarter and upper meet, a leather loop has been ingeniously fastened through the angle, so as to strengthen the junction, and prevent its tearing. To the outside loop upon the left shoe is fixed a triangular piece of leather, which, at first sight, appears to be ornamental, but on closer examination its edge is found pierced with holes, so that in all probability it was attached to another piece of the same material which passed from behind forwards, and protected the tendo Achillis. These shoes or buskins were found upon the body of a man in full woollen costume, discovered in the year 1824, six feet under the surface of a bog in Killery parish, county of Sligo. They were, together with the dress—*Presented by the Duke of Northumberland*. No. 18, a single-piece right side upper, 11 inches long, of the same description as the foregoing, of fine, well-tanned leather, apparently the natural colour, with the smooth side out; joined on the inside, but no fragment of the sewing material remains. The tongue rises into a high flap; the angle between the quarter and upper is cut down to within $1\frac{1}{2}$ inch of the sole, is protected by a stout leather loop on the left side. This shoe was found in a bog in the county of Tyrone.

SHELF II., *Tray F*, Shoes, Buskins, and Pampootas, Nos. 19 to 28.
—No. 19, a strong, leather buskin, figured and described at page 286.

No. 20, a laced left boot, of stout, tanned leather, uncoloured, 9 inches in the sole, and $8\frac{1}{2}$ high in the leg, laced half way up in front. It has a single sole, which was turned without a welt, being attached to the upper with gut. An ornamental seam runs up the front, which rises into a peak. The angle between the vamp and quarter is protected by a strong leather thong, and a small piece has been inserted into the upper at the turn of the heel, in order to remove the angularity at that point; ingeniously contrived thongs fastened this boot in front. It was found in the Queen's County, and—*Presented by Mr. M. Gill.* No. 21, the right sole of a turned pump, 10 inches long, “found, in taking up part of the old city of Dublin wall adjoining the old tower in the Castle-yard, by Mr. Johnson, and said to have lain there since the year 1202.”—*Presented by W. Farran, M. D.,* 21st July, 1842. No. 22, the decorated upper, Fig. 184, described at page 284. No. 23, the lady's single-piece shoe or buskin, described and figured at page 283. Nos. 24 and 25 are the pair of double shoes described and figured at pages 287 and 288. Nos. 26 and 27, a pair of modern pampootas from the island of Inisheer, in Galway Bay.—*Presented by W. R. Wilde, Esq.* No. 28 is a right, thong-sewn, turned shoe of several pieces, and differs in many respects from every other specimen in the Collection. It has been apparently much worn, especially in the sole, and is now $9\frac{1}{2}$ inches long, and composed of thick, well-tanned leather, with the cuticular side externally. The upper is composed of six pieces, viz.: the toe-piece, the two quarters, which are cut down to an angle, a little in front of the arch of the foot; and the spaces between the front and back portions are filled up with lachets on each side, which strapped over the instep; behind there was a flap, which fell over the heel portion, and appears to have been more for ornament than use. The sole is double, so that the thong-stitching embraced three folds of leather. This shoe forms a portion of the deposit of Irish antiquities lately made by the Royal Dublin Society, in the Museum of which body it had remained since 1808. From a letter of that date, found in the shoe, it appears to have been presented to General Vallancey by General Freeman, who procured it from the then Dowager Lady Monck. The letter states that it was discovered twenty feet deep in a turf-bog near Templemore, county of Tipperary.

Tray G, Ladies' Slippers and high-heeled Shoes, Nos. 29 to 34.—

Nos. 29 and 30, a pair of ladies' slippers, each $9\frac{1}{2}$ inches long, very much pointed at the toes; the uppers formed of puce-coloured satin, bound with yellow, and having silk tassels in front, the soles formed of matted cord-work; heels made of cork; and insoles of several plies of linen and paper. Nos. 31, 32, and 33, are three high-heeled shoes, showing the increase in the extravagance of that fashion. The first is beautifully made, of leather; the quarter, black; the vamp, red; the heel is carried down like the head of a hammer, and covered with fine, red leather to near the end, where it is about an inch broad. No. 32 is a left high-heeled shoe, 11 inches long, with a particularly low upper, formed of leather, yellow behind, blue and pink in front. The heel slopes forward $4\frac{1}{2}$ inches, so as to touch the ground underneath the central point of the arch of the foot, where it narrows to $\frac{3}{4}$ of an inch, and then spreads out to about an inch in width. The back of the heel is covered with yellow leather. No. 33 is the most extraordinary specimen of this curious fashion, and that in which it was carried to the greatest pitch of absurdity, the heel being formed of an iron spike, extending $4\frac{1}{2}$ inches from the sole, and ending with a surface only $\frac{1}{2}$ an inch square. It is fastened to the leather heel by brass studs, and takes an oblique direction forwards, inwards, and downwards, as it is a left-foot shoe. The upper is formed of jean, and stuff bound and foxed with red and pink leather, and embossed with white silk. It is difficult to conceive how females managed to progress, or even to preserve an upright position upon such shoes as this, in which the feet must have been as much distorted in one direction as they are by the Chinese in another. The pictures of Hogarth and his contemporaries show that such extravagances in dress were common in his time, and they existed to even a later period in this country. No. 34 is a white satin slipper, with pointed toes, high heels like No. 30, but somewhat lower, being but 2 inches below the sole.—*Presented by Aquilla Smith, M. D.*

The only other articles of hide or leather in the Collection are some small portions of "buff" attached to bridle-bits and harness ornaments among the Bronze Collection; a dagger sheath, No. 1 in Rail-case H, which is 5 inches long, sewn upon one edge, with a loop at the top for attaching it to the

person; the portion of hide, No. 22 "Find" Tray I, Dublin, on the ground floor; and the saddle or horse-cover, No. 7 in the first Compartment of the Southern Gallery. This saddle (*diallait*) is of untanned cow-hide, with the red hair on the upper side, and is shaped like the large saddle-cloth or lower pad of the Spanish or oriental saddle. It is 38 inches wide, is much worn in front, and on each side it is perforated by three sets of apertures, through which were passed the thongs which attached the pad or stuffing to it, and which appear to have been fastened like those used in some of the shoes and buskins. It was found in the Bog of Springfield, near Dungannon, and—*Presented by Robert Foster, Esq.* In the original drawing of the taking of the Earl of Ormond by O'More, in 1600, may be seen such a saddle. Most of the antique trappings must have been of leather; but, with the exception of the specimens already alluded to, no other horse-furniture belonging to early times has been preserved.

ORDER II.—TEXTILE FABRICS.

WOVEN AND KNOTTED FABRICS.—With the distaff and spindle (the knobs or whorls of which latter have several representatives, both in bone and horn, on Tray A, already described at p. 274) must be associated the art of spinning and weaving, and for this purpose the wool of the sheep and the hair of the goat afforded effective materials. The latter substance is not now used in this country, but was employed in making coarse carpets, particularly in the county of Clare, and in several of the western districts, within the last thirty years.

In Rail-case H, No. 6, may be seen a very remarkable specimen of manufactured hair-work, which was probably used as a fringe to some garment, one of the cloaks, for instance, so often referred to in Irish writings. It is composed of goat's hair, not woven, but tied or knotted together like a mat, in small bundles, with transverse bars of the same material,

each thread of the warp being subdivided between the crossings of the woof, so as to leave a clean interspace, as shown in the accompanying cut (Fig. 188) which represents, of the natural size, a small portion of this very curious ancient fabric. This fragment is about 7 inches wide, measured on the length of the hair, and, as shown

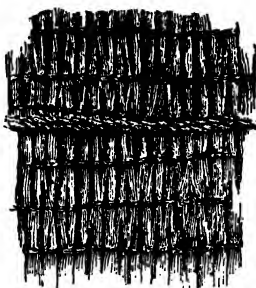


Fig. 188. No. 6.



Fig. 189. No. 8.

in the illustration, is crossed in the middle by a broad band, the very beautiful plait of which is not seen on the wrong or reverse side. It was found 14 feet deep in Carrick bog, on the bank of Lough Sheelan, in the county of Cavan, in 1853, together with a fine woollen band, of a bright brown colour, Fig. 189, apparently woven, and to which it was probably attached: see No. 8 in Rail-case H. The foregoing cut is a faithful representation of a portion of this band, drawn the natural size. It and the hair-cloth were—*Presented by Dr. Fleming.* (See Proceedings, vol. vi., p. 19.)

WOOLLEN GARMENTS.—Having thus disposed of the skin, leather, and hair coverings, formerly employed by the people of this kingdom, we approach the period when the domestication of animals, or the introduction of such breeds from other countries, together with the art of weaving, were known to the Irish. Our histories are silent with respect to the manufacture of animal material in very early times, and the precise costume of any class prior to the English invasion has not yet been decided on. From the learned Essay of the Earl of Charlemont, first President of the Academy, we learn that the woollen manufacture of Ireland was celebrated in the beginning of the thirteenth century, when it appears to have been an article of commerce; but, long prior to that period, woollen fabrics must have been in general use for na-

tive dress.* Eventually, we know it attained such celebrity as to excite the jealousy of neighbouring nations.

With the question of the employment of woollen material might be considered the whole subject of costume; but however inviting the topic, it would be out of place to enter at any length upon such a dissertation in a descriptive Catalogue, except so far as such inquiry may be necessary for the explanation of existing antiquities or of articles in our Museum. A few references are, however, necessary.

Light may be thrown on this obscure subject by referring to the following sources of information:—The annals, and other ancient records, in either manuscript or print; comparative philology, or an examination of the roots, precise meaning, derivations, and affinities with other languages, of the Irish terms employed to express different articles of dress; the illuminations in ancient books; the figure carvings on our stone crosses and shrines; a few drawings, maps, frescoes, and engravings;—and some sepulchral monuments.

We possess unmistakable evidence of our native population having adopted particular colours, of which deep yellow (*croch*), styled by English writers “saffron,” was the most prominent; and so national, that enactments were made to limit the extent of some garments, and to prohibit altogether the adoption of others dyed this colour. The Four Masters, and also the Clonmacnoise Annalists, attribute the art of dyeing party-coloured clothes (the latter say purple, blue, and green) to King Tighearnmas, whose reign extended from A. M. 3580 to 3656. And in the first of these authorities it is stated, under the year of the world 3664, that his immediate successor, King *Eochaidh*, was surnamed *Eadghadhach*, “because it was by him the variety of colour was first put on clothes [no doubt woollen] in Ireland, to distinguish the honour of each by his garment, from the lowest to the highest. Thus was the dis-

* Transactions, vol. i., Antiquities, p. 17. See also Hutchinson's “Commercial Restraints of Ireland.”

inction made between them: one colour in the clothes of slaves; two in the clothes of soldiers; three in the clothes of goodly heroes, or young lords of territories; six in the clothes of ollavs [professors]; seven in the clothes of kings or queens." (See O'Donovan's translation.) In a MS. H. 2, 18, in Trinity College, it is added to the foregoing, that all colours were used in the dress of a bishop.

That there was a *tartan*, or plaid, like that used by the Highlanders of Scotland, there is undoubted proof in the remains of costume preserved in this Collection. It appears to have been black and yellow or "saffron colour;" and probably each clan possessed a characteristic colour, and a plaid, as well as a special dress. All these have now, however, merged into the colour of the frieze worn in particular districts, such as the dark brown of Galway and Mayo; the light blue of Sligo; the silver-grey of Longford; the light drab of Meath, Dublin, and Louth; and the blue-grey, or powder blue, of Kerry, &c.

The female costume has undergone a very rapid change within the present century; for the scarlet or madder-coloured cloaks, blue mantles and crimson bodices and petticoats, which, like the friezes, were all of household manufacture, and for the most part coloured with native dyes, have given place to imported cotton and woollen fabrics. Within the memory of the present generation, in Connaught in particular, some boys wore yellow sheepskin knee-breeches, probably the last remnant of the ancient leathern costume. Long trousers are still considered by many old people there as an unwearable innovation. The large-caped frieze *cota-mór*, or "riding-coat," is daily falling into disuse; and the strong, heavy, felt hats, formerly worn as well for protection in the fray as against the weather, are giving place to caps and soft light hats.

Our only authentic histories afford but meagre references to dress or personal decoration; and the Fenian tales and bardic romances, in the garb in which they now appear, present

too many anachronisms and incongruities to be worthy of quotation until they have been carefully edited and annotated.

With the first woollen garments may be associated metal weapons and ornaments, as the art of spinning and weaving may fairly be assumed to have been contemporaneous with the period when smelting and casting were brought to much perfection.

Our magnificent illuminated manuscripts, such as the Books of Kells and Durrow, in the Library of Trinity College, and the Irish works of the same class in the Monastery of St. Gall,* and other continental libraries, except in very few instances, only show the costume of the ecclesiastics of the periods when they were written; and such dresses were common to all the clerics of Europe at that time.

The figures in the Books of Durrow and Armagh are altogether ecclesiastical. In the Book of Kells, a Latin vellum MS. of the Gospels, said to be as old as the sixth century,† and undoubtedly one of the most beautifully written and most elaborately illuminated works of its period in Europe, there are a few lay figures introduced by the artist, for the mere purpose of decoration, or to fill up space. As the work is thoroughly Irish in every respect, these figures may fairly be presumed to represent the costume of the country at the time they were painted. In some instances the illuminated initial letters are composed of human figures; and although the attitudes are of necessity grotesque, the costume appears to be, in most respects identical with that of the figures alluded to. The following facsimiles (traced and cut by Mr. G. Hanlon), give perhaps the oldest representations of Irish costume now extant. Fig. 190, from folio 200, is evidently that of a soldier, armed with a spear and round target, and placed either in the act of receiv-

* See Dr. Ferdinand Keller's Essay, referred to at page 346.

† See the Rev. Dr. Todd's paper on "The Biblical Manuscripts of the Ancient Irish Church," in the *Irish Ecclesiastical Journal* for 20th Sept., 1846, No. 75.

ing an enemy, or compressed by the artist to suit the space on the page unoccupied with writing. The head-dress is yellow, with a mitred edge along the brow, as occurs on many other



Fig. 190.



Fig. 191.

human heads in that work. The coat is green; the breeches, which come down below the knee, are light blue, picked out with red; and the beard and moustache brown. The legs and feet are naked. The shield is yellow; and the spear-head blue, exactly resembling some of those of iron in the Academy's Collection, in which the cross rivets project considerably beyond the socket. A line of red dots surrounds the outline of the figure—as is usual in the Book of Kells, and as may be seen in many of the initial letters, especially those used in this Catalogue, which are all copied from that work. At folio 201 there is a sitting figure, in the act of drinking from a circular goblet (Fig. 191), wearing a sort of turban, principally yellow, with a flesh-coloured border; the cloak is dark red, bound with yellow; the tunic blue, with a yellow border and green sleeve; the feet are naked, and partially concealed by the letters, which shows that the illumination was made after the text had been completed.

In the two small equestrian figures on page 300, we have another phase of costume. Figure 192, from folio 89, shows the ancient short cloak remarkably well, and, from a careful examination of both figures, it would appear that the horses were also clothed or caparisoned. The cap is yellow, fitting tightly

to the head, and hanging down behind—or this head-dress may represent the natural hair. The cloak is green, with a broad



Fig. 192.



Fig. 193.

band of bright red, and a yellow border; the breeches green; the leg covered, but the foot naked. The cover of the horse is yellow, but the head, tail, and such portions of the right legs as appear, are green. The word over which it is placed is engraved, to show the position of the illumination. Fig. 193 occurs on folio 255; the parchment has been injured underneath the cloak, but a sufficiency of the colour remains to show that it was green; the cap is yellow.

The initial N, at folio 253, represents two human figures, with beards, yellowfringed caps, and tight fitting green dresses, similar to those in the foregoing illuminations. In almost all instances throughout the Book of Kells, the cap is yellow, but in none is it conical. At folio 202, a number of heads are crowded into a large illumination, in which the head-dresses, are principally of the turban shape, of a yellow colour, picked out with red, gold, or black. The cloaks on these figures are red, blue, green, and striped, but in no instance cross-barred, or plaided, like the modern tartan; and it remains for the archæologist to determine whether their costume is intended to be native or oriental. At folio 99 there is an unfinished figure of a spear-man (like Fig. 190), in a recumbent attitude, holding a small, round shield in the left hand, and grasping a spear with the right. The outline was sketched in red, and a blue wash filled up all the parts intended for clothing. The figure is curious, as showing the process of illumination.

From these figures we see that, the lower limbs were clad in tight-fitting garments, generally blue, that reached a little below the knee, like the modern breeches; the legs and feet were naked,—the *braccæ* or chequered pantaloons not being then the fashion,—and the body was covered with a light tunic, with sleeves reaching as far as the wrist. The cloak, however, was the chief and most highly decorated garment. It is also manifest that the costume of the Irish was, at that period, both picturesque in shape and highly coloured.

Upon the fly-leaf of the Book of Ballymote, an Irish vellum manuscript, written in the year 1396, now in the Library of the Academy, there is a rude pen-and-ink sketch of a ship, supposed to represent the Ark, with eight figures in it. The costume of these is a simple, unornamented, close-fitting tunic, with sleeves, fastened round the neck and down the front, like the primitive leather garment already described at page 276, —possibly the artist wished to portray the oldest garments known, even by tradition. The figure of Noah is encircled with a broad belt, decorated with a buckle and tassel, and wears a crown like that of the English monarchs of the twelfth or thirteenth centuries, and resembling one of those represented in the Knockmoy fresco, described at page 317.

The figures on our Irish metal shrines and stone fonts are generally draped in ecclesiastical costume, and do not therefore assist in the present inquiry.

Our early sculptured monuments are chiefly of the same class, for although there are a few representations of Irish dress, the great majority of the figures thereon are clad in the ecclesiastical costume of Christendom, and not of Ireland alone, at the periods they represent. The number, beauty, and antiquity of the sculptured crosses in Ireland would afford ample materials for a large volume, descriptive of their respective styles of art, and character of ornament; the associations and historical recollections of the localities where they are placed; in many instances, of the biographies of the persons by whom they

were erected; the then prevailing ideas respecting the various scriptural scenes they represent; the legends or incidents which many of their sculptures commemorate, and the costumes of the figures in the various processions, religious services, and battles, &c.*

Those crosses which contain figures are much more injured by time, weather, or the hand of man, than those on which the sculpture is principally ornamental. On that at Tuam, one of the very earliest in Ireland, there are some figures of men and animals, and the representation of a chariot; and the effigy in the Crucifixion wears a kilt. There are also figures of men, horses, and chariots, sculptured upon the base of the street cross at Kells. The cross at Kilclispeen, county of Kilkenny, is decorated with many human figures. On the base is a group of seven, each clothed in a tunic and cloak, with a hat like that of the ancient palmer, falling down behind upon the neck; six of these—shepherds or ecclesiastics—bear curved implements in their hands, more like handled celts than croziers. In the Clonmacnoise crosses, the figures are chiefly those of ecclesiastics, but in two, apparently military, the beards are very long, and in one it is plaited; their cloaks are fastened with brooches on the right breast. In one of the Kells crosses there are some military figures, armed with circular shields, spears, and swords; a group of horsemen, with round targets and conical caps; and on the west side of the base of the street cross, there is a remarkable group of five fighting figures, two armed with spears, and holding shields of a peculiar lunette shape; the three others having swords and round targets.

* Dr. Petrie alone could write such a work as that sketched in the text. Mr. G. V. Du Noyer lately presented to the Academy a most valuable collection of drawings of sculptured crosses, and other incised stones. (See page 252.) It is to be hoped that some day they may be published. Mr. O'Neill has recently published folio lithographs of several of our Irish crosses; and it is to be regretted that so picturesque and expensive a work should not have attached to it some letter-press descriptions of antiquarian value, instead of unworthy personalities and unseemly criticisms upon established facts, respecting the origin and uses of the Round Towers.

Where the military figures are in tolerable preservation, and when viewed in a particular light, we can always trace the shield, with its central *umbo*, or boss ; and on many, the broad spear, the curved-handled celt, and the long iron sword, with the straight cross-guard, resembling the Danish pattern ; but we do not find the very ancient leaf-shaped bronze sword anywhere represented.

The magnificent crosses of Monasterboice are covered with human figures, chiefly, however, connected with scriptural subjects. An examination of some in the compartments upon the short cross erected by Muiredach, the Tanist Abbot of Armagh, about the middle of the ninth century, will assist the present inquiry. In each of the three compartments on the west side there is a group of three figures, evidently the same personages repeated. The history which these sculptures are intended to commemorate evidently commences in the lowest entablature, where an ecclesiastic in a long cloak, fastened with a brooch, and holding a staff in his hand, stands between two figures, either soldiers or robbers, each armed with a long Danish sword, and dressed in a tight jerkin and trunk hose, plaited round the thigh, and ending above the knee. Both have long moustaches, and their head-dresses consist of close caps falling behind, not unlike the present Neapolitan cap. Some of these resemble, in a remarkable manner, the illuminations figured in the Book of Kells, previously described. In the compartment over this, the same personages are represented as students, each with a book, but the soldiers have assumed the ecclesiastical garb, although they retain the moustache. In the top compartment, the figures are again repeated, all in long flowing dresses, the central one—then, perhaps, aged, or at the point of death—is represented giving his staff to one, and his book to the other of his former assailants.*

* See the Author's work upon "The Beauties of the Boyne, and its Tributary the Blackwater," Second Edition, p. 302, containing the woodcut illustrating the legend mentioned in the text, and also the cut (Fig. 194) on the next page.

In the accompanying illustration, drawn by Mr. Wakeman, in 1846, from another compartment of this cross, is shown a scene, which probably represents an execution. In the left-hand corner is seated a figure, perhaps a judge or Brehon, wearing a long gown or tunic, which reaches nearly to the feet, and a head-dress which falls over the shoulders. The right hand holds a curved drinking-horn, possibly figurative of some judicial ceremony, and on the lap rest a long, straight sword, and round buckler. These may, however, belong to the next figure, who is

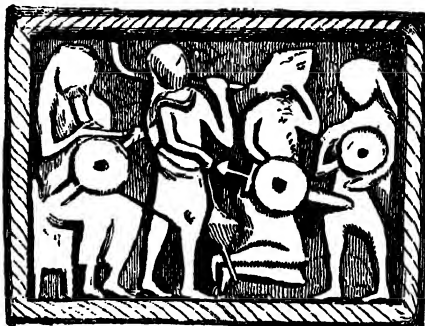


Fig. 194.

armed with a celt or curved implement, held in the left hand, which is upraised, as if in the act of striking the third figure, which kneels before it. This second figure has a shorter tunic than the first, and a small hood or cape hanging from the head and shoulders. The right hand holds either some article attached to the captive's feet, or a sort of paddle; but which, owing to the great age and weather exposure of this cross, it is now difficult to determine. The captive has a conical cap, and is armed with a circular shield, and a long Danish sword. The left hand is raised to the head, and the figure seems to shrink from the impending blow of its adversary. The fourth resembles the second in costume, and merely carries a shield.

The effigies on our later sepulchral monuments are, with few exceptions, to be described hereafter, those of Anglo-Normans or Anglo-Irish; and they do not differ much from the same class of representations in Great Britain.

If we seek for documentary evidence before the period of the Anglo-Norman invasion, the earliest accessible authority upon the subject of costume is the "Book of Rights," already

quoted in this work. There, among the tributes paid by the different states or kingdoms of the Irish Pentarchy, we read of the cloak or *brat*, the outer garment,—of which the following varieties are specified:—"A thousand cloaks not white,—speckled cloaks,—cloaks with white borders,—red cloaks,—red cloaks not black,—blue cloaks,—royal cloaks,—green cloaks,"—and "green cloaks of even colour,—cloaks of strength,—coloured cloaks,—chequered cloaks of lasting colours,—napped cloaks, with the first sewing, which are trimmed with purple,—purple cloaks of fine brilliance,—purple cloaks of fine texture,—purple cloaks of four points,—and cloaks with golden borders." The *cochall*, hooded cloak or cowl, is seldom mentioned among these tributes.

The *matal* (which word is not translated by O'Donovan), was probably smaller than the cloak, and may have been worn beneath it, or as an ordinary coat, and it is remarkable that on only one occasion, where we read of its having a "golden border," is it mentioned that that article of dress was decorated; but we read of "fair beautiful matals,—royal matals," and also of "matals soft in texture."*

The tunic, *inar*, formed a considerable portion of the ancient tributes, and is described as "brown red,—deep red,—with golden borders,—with gold ornaments,—with golden hems,"—and also "with red gold."

The *leann*, translated by O'Donovan "mantle," would appear to have been a white woollen garment, probably a sort of loose shirt, but, from its being almost invariably mentioned along with "coats of mail," it lends probability to the conjecture that it was only used in connexion with armour. Thus, the chief of Cinél Eanna was entitled, among other tributes, to receive "five mantles, five coats of mail;" and the king

* "Matal was probably another name for the *Fallaing*, which in latter ages was applied to the outer covering or cloak; but this is far from certain. Matal is applied in *Leabhar Breac* to the outer garment worn by the Redeemer."—See note to *Leabhar na g-Ceart*, p. 38.

of Tulach Og, to “fifty mantles, fifty coats of mail,”*—but “mantles [*leanna*] of deep purple” are also enumerated.

When flax and hemp were first introduced, has not been recorded. Linen shirts were in use at the time of the English invasion, and are said to have been of immense size, and dyed a saffron colour. Notwithstanding the suitability of our soil to the growth of flax, it was only on the suppression of our woollen manufacture and the introduction of the Huguenot and Dutch settlers into Ulster, that this article of native produce attained celebrity.† We do not possess any specimen of ancient linen in the Academy’s Collection; and the only articles containing flax or hempen fibre of any great age are the sewings of some vellum manuscripts, in particular the *Leabhar na h-Uidhre*; but several of our old works of that class are sewn to horse-skin bands, with strong twisted silk.

The variegated and glowing colours, as well as the gorgeous decorations of the different articles of dress enumerated in the Book of Rights, added to the brilliancy of the arms, must have rendered the Irish costume of the eighth and ninth centuries very attractive. It is remarkable that, except helmets, Be-nean, in his relation of the Tributes and Taxes, does not enumerate any form of head-dress. Most of the Irish appear to have used their luxuriant hair as a natural covering for the head, even in the time of Elizabeth, and the only term employed by authors for our ancient head-dress is that of *bar-read* (from the mediæval Latin word, *birretum*), a high conical cap, somewhat between that known as the Phrygian,

* The subject of mail and armour will be considered under the head of Bronze and Iron Weapons. Dr. O’Donovan has afforded the writer the following note:—“The word *leqn* (which has nothing to do with *léine*, a linen shirt) is explained in a MS. in Trinity College Library, H. 3, 18, p. 75, and in Cormac’s Glossary, *sub voce lenn*, as a white *brat* of wool; and the word is understood in this sense by Colgan and the writers of the seventeenth century. The word is simply rendered *brat* by O’Clery.” The Gaulish term *lenna* occurs in Isidore.

† See an Essay on “The French Settlers,” in the *Ulster Journal of Archæology*, vol. i., page 209.

which was common in England in Saxon times, and the pointed grenadier's cap of the last century, or the present Persian, with which all oriental travellers are acquainted;* but the material of which it was composed has not been determined; perhaps it was formed of different textures or skins. The Irish helmet, of which we possess a specimen, was of this shape.

In the plan or perspective view of the taking of the Earl of Ormond in 1600, preserved in the Library of Trinity College, the figure of O'More is represented in a short, red cloak, fringed round the neck, a high conical cap or barread of a light colour, and tight-fitting pantaloons.

Cloaks—the *cochall*, and the *fallaing*—were, however, the chief articles of dress in early times, but were probably different either in shape or material. In Cormac's Glossary, the former term is derived from the Latin *cucullus*; and, says Ledwich, "if any reliance is to be placed on the legendary life of St. Cadoc, cited by Ware, the Irish *cocula*, in the middle of the sixth century, was a cloak, with a fringe [such perhaps as that figured at p. 295] or shaggy border at the neck, with a hood to cover the head."†—*Antiquities of Ireland*, p. 359.

Scarlet cloaks were commonly worn by the Irish chieftains in the fourteenth century, and, as already stated at page 297, dark crimson-red was the prevailing colour of those used by

* The cap of rushes made by children gives a good idea of the ancient *barread*, of which it is possibly an imitation. The *old* leprechaun, or fairy shoe-maker, was always described as wearing knee breeches and a conical cap; although the moderns usually represent him in a three-cocked hat.

† Mr. Whitley Stokes' "Irish Glosses," published by the Archæological and Celtic Society, contains much valuable information on the true etymology of these Irish words; and will be a lasting monument of the deep learning and vast research of the author. *Cocall* glosses *Casulla*, and is, he says, one of those Celtic words which, by the influence of the Church, has become universal. "The *Cuculla*, sometimes called *casula* and *capa*, consisted of the body and the hood, the latter of which was sometimes specially termed the *casula*." In the Breton it is *kougoul*, in Cornish *cugol*, and in English *cowl*. *Sléstan*, according to the same writer, was "probably a cloak covering the thighs and hams,"—and *fallaing*, a mantle, may, he says, be connected with *pallium*; and he quotes the Welsh expression in which the same word

the female peasantry until the last few years. In early times the cloak was furnished with a hood, which could be drawn over the head like the Suliote capote; but it does not seem to have been worn much longer than the time of Spenser, when enactments were made forbidding its use.* It was fastened either in front or on the right breast with a pin or brooch; and the very general use of this and other cloak or scarf-like garments may account for the circumstance of so many fibulæ of different kinds being found in this country. Walker, in his "Historical Essay on the Dress of the Irish," gives the figure of a king draped with a long flowing cloak, fastened with a brooch across the breast, and reaching to the ground (see Plate V. Fig. 1). This he calls the "*canabhas*." It was a long, graceful robe or cloak used by kings, brehons, and priests, and of which we have a vestige in the heavy-caped frieze *cota-mor* of the modern Irish, often worn hanging from the shoulders. The ancient cloak, no doubt, varied in shape, size, and probably colour, at different times and in different localities; but it was evidently the analogue of the sagum of the Celtic Gauls, described by Plutarch as "parti-coloured;" the thick, woollen *læna* of the Belgæ; the *reno* of the early Germans; the *chlamys* of the Greeks; the *pallium* or *toga* of the Romans; the *bornous* of the Arab; the plaid of the Highlander; the capote of the Al-

is used, *mal y Gwyddyl am y ffaling*, "like the Irishman for the cloak." In a MS., quoted in the same work, we find *broit buit* used in a passage thus translated, "an old man in a yellow cloak, in a blue tunic of full size," which, while it explains the meaning of the word *brat*, is also illustrative of the colours used in Irish costume.

* In Dineley's Account of his Visit to Ireland in the reign of Charles II., published by Mr. E. P. Shirley in the Kilkenny Archæological Journal, it is stated—"The common people of both sexes weare no shoos, after the English fashion, but a sort of pumps called brogues. The vulgar Irish women's garments are loose-body'd without any manner of stiffening." And again, of these common Irish, he states—"Never at any time using hats, after y^e manner of the vulgar English, but covering and defending their heads from rain with a mantle, as also from the heat of the sunne to which Spanish lazy use the Irish men apply their cloaks."—Vol. i., N. S., p. 186.

banian ; and the abbas of the Turk and most oriental people, including the Hebrews.

In the twelfth century, Giraldus Cambrensis thus briefly describes the costume of the Irish: they “wear thin, woollen clothes, mostly black, because the sheep of Ireland are in general of that colour; the dress itself is of a barbarous fashion; they wear cappuces, which spread over their shoulders, and reach down to the elbow. These upper coverings are made of fabrics of different textures, with others of divers colours stitched on them in stripes. Under these they wear woollen fallings (*phalinxæ*) instead of the pallium, and large loose breeches and stockings in one piece, and generally dyed of some colour.”—*Topographia Hiberniæ*, Book iii., chap. ix. This description of the braccæ or trowsers accords perfectly with a specimen of this portion of dress in the Academy’s Collection. The same author tells us that the native Irish went “naked and unarmed to battle;” by which latter assertion he must have meant, unprovided with defensive armour, in contradistinction to the Anglo-Norman soldiery, who, at that period, wore metal breast-plates and helmets. That armour had, however, been used by some classes of the Irish, is proved by the fact, that “coats of mail” (in Irish *luireacha*, from the Latin *lorica*) are enumerated among the Irish tributes, at least two centuries prior to the visit of the Welsh historian. (See Book of Rights.) The former statement is possibly founded on fact; for we know that another Celtic race, the Highlanders of Scotland, stripped off the greater portion of their clothes at the battle of Killiecrankie, several hundred years later.

From an illuminated copy of Giraldus, in the possession of Sir Thomas Phillipps, Bart., some small sketches have been given by Mr. Planché, in his History of Costume, in which the cloak and trows, as well as a short jacket, like the *bau-neen*, or flannel vest of the modern Connemara peasant, are represented. Diarmaid Macmurrough is figured in a short tunic and tight trows; with a long beard, and uncovered

head, as shown in the accompanying figure, given the natural size, from the drawing in the original manuscript, and for which we are indebted to that distinguished antiquary, Mr. Albert Way. The ex-king of Leinster being at that time an ally of the English, this portrait may very probably have been taken from life. He is armed with a long-handled hatchet or battle-axe, the blade of which is shaped like some specimens in the Museum (see the Iron Collection in the Southern Compartment on the ground-floor, Trays I and K). It does not resemble the gallowglass axe of later times; but is that known by the name of the *Sparthe*—a "*sparthe de Hibernia*," such as "Gentle Mortimer" had in his armoury at Wignore Castle, in 1322. The hair is sandy; the tunic or short coat (*inar*) is of a brown colour, fastened round the waist with a belt, and bound tightly to the wrists with bands, that were probably ornamented. The tight-



Fig. 196.

fitting trews are green. Of this memorable Irish character, Giraldus elsewhere says: "Dermon Mac Morogh was a tall man of stature, and of a large and great bodie, a valiant and a bold warrior in his nation; and by reason of his continuall halowing and crieng, his voice was hoarse: he rather choce and decided to be feared than to be loved: a great oppressor of his nobilitie, but a great advancer of the poore and weake. To his owne people he was rough and greevous, and hatefull to strangers; he would be against all men, and all men against him."*

* "Sylvester Giraldus Cambrensis, his vaticinall Historie of the Conquest of Ireland," book I., chap. vi. Hooker's Translation, 1587.

Mr. Way has also furnished us with the two following illustrations from the same source. That given below (Fig. 196) shows the short cloak or fallaig of olive green, like those in the Book of Kells, already described at page 300.* The trews are, in the original, of a light brown; this figure also wields the sparthe or battle-axe, but with a shorter handle than in the foregoing.



Fig

The third figure, also procured from the same rare manuscript, is one of great interest. It represents a scribe seated in a bird-cage chair (such as existed in many

* In that truly national work, "The Sculptured Stones of Scotland," published by the Spalding Club, we find many examples of costume that serve to illustrate, in a remarkable manner, the dress of the ancient Irish, or the Celtic race generally. The hooded cloak or cohall, in particular, is so well represented as to leave no doubt respecting its shape, and the way in which it was worn. See, in particular, the plate of the incised pillar-stone at St. Madoc's, near Perth. On that monument there are three equestrian figures, not unlike those from the Book of Kells, represented at page 300 of this work; each is in the same attitude, with the legs projected forwards, and the body covered with a short triangular cloak, the hood of which is carried up over the head.

Every day's observation and research bring to light new affinities with early Irish costume, and it is only by a careful study and comparison of the primitive pictorial representations of other countries with the memorials still existing in our own, that we can form a fair idea of the early costume of the Irish. In the great French work, "*Herculaneum et Pompeii*," tom. v., pl. 20, there is a battle scene copied from a mosaic at Pompeii, in which the arms and dress of the combatants are almost identical with those of ancient Ireland. It is supposed to represent the battle of Arbela, between Darius and Alexander; but it is just as likely to illustrate an engagement with the Gauls. The vanquished are clothed with tight-fitting trowsers, close tunics, several of which are plaided, and cloaks with the hood coming over the head, precisely like the Irish cohall. The chief figures wear torques round the neck, and bracelets on the wrists. Some fight in chariots, and are armed with bows and

parts of the country until very lately); before him is a desk, which supports the work he is engaged on, and underneath is the inscription, "The Scribe writing the marvellous Kildare Gospels." The person is probably an ecclesiastic, as the top of the head is shaved. He wears a short jacket of greenish-brown, fringed round the lower edge; the trowsers are light brown; and from beneath the desk hangs a short drapery of a green hue, probably a fold of his cloak. The right hand holds a pen, and in the left is what appears to represent a knife, and with which he keeps the page in its place. In each of the figures



Fig. 197.

the braccæ fit tight to the ankles; and the shoes or buskins, which are long and pointed, rise high over the instep, like those seen in the Knockmoy fresco, described at page 318.* "The

arrows, long spears, and leaf-shaped swords. Besides the torques round the neck, slender, twisted bars, apparently of metal, encircle the arms, a short distance below the shoulder. In some of the figures the hood is retained in its place by a narrow frontlet, apparently of gold. The colour of the garments in the figures on the mosaic are also peculiarly Irish. In some, the cloak is yellow; the mantle, dark red; and the tunic, purple, edged with white. This latter is, moreover, sprinkled with triple stars of gold, arranged after precisely the same fashion as those figured in the Book of Kells (see Figs. 191, 192, and 193). The chariot in which the principal figure stands, resembles some of those figured on our sculptured crosses. The charioteer wears a pointed cap, a green tunic, and a tartan vest. The head-dress of others is yellow. All the vanquished wear beards, and their hoods or head-dresses envelop their chins. My attention was called to this remarkable plate by Mr. C. M. O'Keeffe, a writer who has devoted much attention to the subject of Irish costume. Virgil's description of the dress of the Gauls accords, in almost every particular, with the foregoing: *Æn.* viii. For other illustrations of costume, see Dr. Petrie's essay on the "Seals of Irish Chiefs," in the *Irish Penny Journal*, page 356.

* Among the references to early Irish costume given in our Irish MSS., we read of the *Tuighean*, or the chief poet's cloak, composed of the skins of birds, evidently those of water-fowl. See Cormac's Glossary, also the "Dialogues of the Two Sages" in the Library of Trinity College. "*Tuigen*, quasi *toigen*, from *toga*, for the *toga* is *vestis pretiosissima*, a kind of most precious garment. *Aliter tuigen*, i. e. *tuig-en*, for

Irish, like the Gauls," says Lynch, "wore shoes with long, slender, conical tops, and only one sole, for the greater celerity in running."—*Cambrensis Eversus*, chap. xiii.

Sir James Ware says—"A frieze cloak, with a fringed or shagged border, was the outward garment of the Irish, and this they wore almost down to the ankles." And his commentator, Harris, adds—"The Irish mantle, with the fringed or shagged border sowed down the edges of it, was not always made of frize or such coarse materials, which was the dress of the lower sort of people; but, according to the rank or quality of the wearer, was sometimes made of the finest cloth, bordered with a silken or fine woollen fringe, and of scarlet and other various colours. Many rows of this shagg or fringe were sowed on the upper part of the mantle, partly for ornament, and partly to defend the neck the better from the cold, and along the edges run a narrow fringe of the same sort of texture."*

Although the word *fallaing* or *filleadh* is not met with in Irish works older than the twelfth century, both the article and the name have come down to modern times, for fifty years have not elapsed since it was worn in parts of the west of Ireland. This garment consisted of a triangular piece of home-made, wool-dyed, blue cloth, with the corners rounded off, and about two yards wide. It was carried up over the head, and fastened on the breast by an iron pin or *dealg*, and, being of a triangular shape, and worn somewhat like a scarf, shawl, or shepherd's plaid, a fresh portion could be brought up on the shoulders from day to day. It was popularly called a *faullen*.†

the *tuigen* of the poets is made of the skins of white and variously-coloured birds; up to the girdle it is of the necks of drakes, and from the girdle to the neck, of their tufts."—*Cor. Gloss., in voce Tuigen*.

* The Antiquities of Ireland. Dublin, 1762. Fol., vol. ii., p. 175.

† The triangular shape and rounded corners of this *fallaing* contrasts with that form of cloak described at page 805, as having "four corners." No doubt this was the Irishman's *plaid*, which, when the Scot economized, he called it a *filleadh-beg* (*fillibeg*), the little fillaing or *kilt*. Another outer garment worn in

Even yet many of the female peasantry, and all the beggars in the south and west, use, out of doors, a sheet, quilt, or blanket, as a mantle or outer covering, generally drawn up over the head, and fastened on the breast, as described above.

The ancient Celtic *braccæ*, the bracked, speckled, striped, chequered, or many-coloured leg coverings, called in the native tongue *truis* or *triubhais*, do not require any general description here, as this garment is figured at page 327 (see Fig. 207).

• In the illuminated metrical French history of the Irish campaign of Richard II., published in the *Archæologia*, vol. xx., we find many curious references to the state of the country, the mode of warfare, and the costume of that period. One of the illustrations represents Art Mac Murrough on horseback, riding fiercely down a mountain pass, bare-footed, without a saddle, and in the act of casting a long spear. His costume consists of a conical cap of the Persian shape, a wide cloak flowing loosely on the shoulders, and an inner spotted garment with sleeves, descending like a gown or skirt to the ankles. He also wears a long and rather pointed beard, according to the ancient custom of the Irish.* The whole figure resembles some of those represented in the Nineveh sculptures. Strutt asserts, but does not state on what authority, that the chieftain's robe was "light pink." Behind their chief ride two mounted warriors, also armed with spears, and with the

Ireland some years ago was the "*Jock-coat*," often of frieze, a long great-coat, with sleeves, a hood or cape, and a broad belt which fastened it round the waist. It was worn by both sexes, and, for a time, became fashionable in the upper ranks, even as now the ancient Irish brooch is admitted to polite society, and the crimson cloak of the Claddagh is esteemed becoming. In addition to the various references already given, the reader is referred to articles on "The Ancient Dress of the Irish," in "*The Celt*" for 1858, pp. 46 and 65; and in the *Ulster Journal of Archæology*, vol. v., p. 93, and vol. vi., p. 316.

* Wearing the beard long, as we know the ancient Irish did, serves to account for the circumstance of no ancient bronze razors having been discovered in this country, while such articles, as well as tweezers, are found in Denmark in the greatest abundance. They decrease in frequency as they approach the north.

hoods of their cloaks drawn over their heads, they present all the characters of the fiercest Bedouin tribes.*

One ancient specimen of native art still remains in the country; the curious fresco painted on the wall of the Abbey of Knockmoy, near Tuam, county of Galway; a full-sized copy of which, made by Mr. Macmanus for the Dublin Exhibition in 1853, now hangs in the tea-room of the Academy. It consists of two portions: the lower represents the oft-repeated scene of the martyrdom of St. Sebastian, naked, bound to a tree, and pierced with arrows; with two archers in the act of drawing their bows. To the right of the centre there is a very fine sitting figure, representing the Almighty, having on the head *animbus*, resembling one of our golden semilunar ornaments; the right hand is raised in the act of benediction, and in the left is some square object, believed to be part of a cross. Beyond this figure is an imperfect one of a recording angel, holding a balance, but its outlines are much effaced. An opinion, first promulgated by Ledwich, has long existed, that this scene represents the execution of young Diarmaid, the son of Mac Murrough, King of Leinster, when he was a hostage with Roderic O'Connor, King of Connaught, at the time

* It is more than probable that all the inhabitants of the British isles wore a costume common to the Gauls and Germans at the same period; for Tacitus, writing in the first century, says of the Germans, they wear "a loose mantle (*sagum*), made fast with a clasp, or, when that cannot be had, with a thorn. The rich wear a garment, not, indeed, displayed and flowing, like the Parthians or the people of Sarmatia, but drawn so tight that the form of the limbs is palpably expressed."—*De Mor. Ger.*, sec. xvii.—Here we have a perfect description of the brat or mantle, and the braccæ or trews; and the former, moreover, fastened, like the Irish, with a thorn or *dealg*. Again, the same author, in his History, describing Cæcina, the Vitellian general, says, he wore a party-coloured mantle, and breeches, used only by savage nations, and not by the Romans. In the twelfth century, we read in Johnstone's edition of the "*Antiquitates Cælo-Scandicæ*," that Harold Gillius wore an Irish cloak: "*Hibernico fere utebatur amictu veste nimirum curta cuique*."—p. 246. This chieftain, it is said, generally wore the Irish dress, viz., "a shirt, and braccæ extending to the ankles, bound by latches beneath the soles of the feet; an Irish cap on his head; besides, he carried a spear in his hand."—p. 248. See also Laing's translation of "*The Heimskringla*," vol. iii., p. 194.

of the Anglo-Norman invasion in 1172. When, however, the question was brought under the notice of the Academy in 1853, Dr. Todd showed clearly that the subject of the painting was the martyrdom of St. Sebastian,* and not the execution of one of the hostages at Athlone, 230 years before the picture was painted. See "Proceedings," vol. vi., p. 3.

In the upper compartment there are six crowned figures,—three skeletons, and three draped kings,—the popular medieval *Moralité*, entitled "*Le dit des trois morts et des trois vifs*;" but believed by Irish antiquaries to represent living and extinct members of the O'Connor line.† It has been proved that this work was executed about the year 1400, by Connor O'Eddichan, a native artist, for Malachy O'Kelly, chieftain of Hy-Many, who also caused a monument to be erected in that abbey, to the memory of himself and his wife, Finola. If the original interpretation of Ledwich and others were correct, we should here have undisputed evidence of the costume of the Irish in three grades of society,—king, brehon, and soldier,—either of the period which the drawing was intended to illustrate, or the day of the artist who designed it; but that has not been proved. With, however, the exception of the principal figure in the lower compartment, which is undoubtedly that of the Deity, the garb of all the others appears to be Irish.

The archers are clad in tight yellow hose or braccæ, and short, greenish jackets, fastened round the waist with a belt,

* In the famous fresco painting by Pietro Perugino, in the church of Panicali, in Italy, representing the martyrdom of St. Sebastian, there is a figure of the Deity in precisely the same attitude as that in the Knockmoy fresco; and even the colouring of the robe is the same: yet Pietro did not flourish till the end of the fifteenth century. See the Chromo-Lithograph, published by the Arundel Society in 1856.

† See Mr. Curry's letter to Dr. Todd, printed in the Proceedings, vol. v., p. 3. See, also, Dr. Petrie's description of the fresco, in the Dublin Penny Journal, vol. i., p. 2. The public are indebted for the preservation and exhibition of this ancient monument of Irish art to the zeal of Dr. Lentaigne. A somewhat similar mural painting, and of about the same age, exists in the church of Ditchingham, Norfolk.—See the Archæological Journal, vol. v., p. 69.

which also holds the quiver. One is bare-headed, and the other wears a small conical head-dress, known as the Phrygian cap, in which the Anglo-Saxon peasantry are occasionally represented (see Fig. 198). Their bows resemble those used in England in the eighth century, in which the strings are "not made fast to the extremities, but permitted to play at some distance from them."* This figure measures 5 feet 3 inches; the left arm and part of the bow have been effaced.

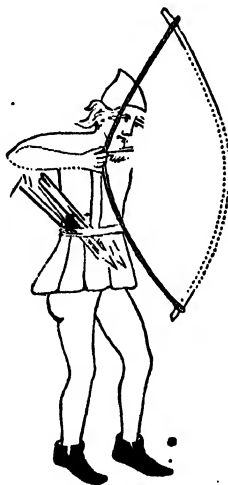


Fig. 198.



Fig. 199.

The royal personages, of whom the central figure, 5 feet 11 inches high, including the crown, is represented above, are also partially obliterated. They are dressed mostly alike; each wears a loose green tunic, with a white border, gathered round the waist by a belt, and also a short, green cloak, together with a thick roll of stuff round the neck. The artist evidently intended to represent a hawking scene. In this figure there are indistinct indications of the bird which was held on the left wrist; while the right hand appears to have been raised, as if in the act of caressing it. The dress of the third

* Strutt's "Sports and Pastimes of the People of England," London, 1845, p. 49.

king, who is armed with a sword, differs slightly from that of his companion; he appears to have just flown his hawk, a fragment of the painting of which still remains, as shown in the foregoing cut, Fig. 199. Each of the figures in this painting, kings and archers, wears precisely the same description of buskin or half boot, slit at the side.

As regards costume, the most remarkable features connected with these figures are the crowns. They appear to be merely emblematical, in accordance with the conventional mode of representing a king at that period. Those on the heads of the kings are evidently the same as the contemporaneous English crowns of the time of Edward III., when, indeed, the current coin of this country bore that image. Those on the skeletons are of an earlier date. Moreover, no proof has yet been adduced to show that the Irish kings or chieftains ever wore crowns of this description, or that coronæ, or any such insignia of royalty, were used at their inauguration.* The magnificent golden diadems, which we still possess, are of a totally different description from those of British crowns. For the further consideration of this subject, see the section on Gold.†

* The crowns of gold and silver, with precious stones, used as decorations of our early shrines, or placed upon the heads of figures of the Virgin, &c., &c., or suspended in various parts of our early churches, afford no proof whatever of such articles having been used as emblems of royalty by any of the Irish kings. See Petrie's "Ecclesiastical Architecture of Ireland and Round Towers, &c.," in the Transactions, R. I. A., vol. xx., pp. 196, 204.

† As a good example of the pleonastic, inflated style of historical romance-writers, as well as to afford an idea of the traditional Irish costume, the following description of the dress of Conn of the Hundred Battles, extracted from Mr. Curry's "Translation of the Battle of Magh Leana," said to have been fought before our Christian era, will serve as an illustration of the foregoing text:—"Then Conn arose, and put upon his fair skin and beautiful body his battle-axe and combat suit, namely, his dark-gray, flowing, long, wide, skin shirt, with its three beautiful, varied, well-coloured wheels [brooches] of gold in it. He put on his well-fitting coat of distinction, made of wonderful cloth of the flock-abounding, beautiful land of promise, bound with girdles and buttons, and with embroidered borders of red gold, so that it fitted to every part

Both sides of the large, bone book-cover, referred to at page 255, are elaborately carved with quaint devices; and on the external surface is displayed a shield, bearing the heraldic device of the Fitzgeralds, beneath which is a group of figures, which, by permission of the owner of the article, we are here enabled to present, as another illustration of Irish costume, of about the same period as that of the Knockmoy fresco just described. It represents five figures engaged in some sort of game; each is clothed with a short jerkin or tunic, made full, and plaited below the waist, with slashed sleeves, which are also striped and parti-coloured. They also wear striped and plaited vests, and two of them have knee-breeches. All may have been intended to be so clad; but there are three not so

which could be touched by the sharp point of a hard needle, from the top of his head to the calves of his legs. Outside this, he put on a heavy, firm, strong-ringed coat of mail, with its firm head-piece of the same kind. He put his light, strong leg-armour, made of fine spun-thread of *finndruine*, upon his legs, giving a dignity to his noble carriage, and being a protection against cutting, and a support in resistance. He put his two lacerating gloves upon his hands, having the colour of snow freely to be seen upon them, and possessing the attribute of victory in the field of battle, and that no erring cast should be thrown from them, by day or by night. He put upon his neck his easy, thick, noble, light collar, and upon his head his diadem [*minn*] of a chief king, in which were fifty carbuncle gems of the beautiful rare stones of eastern India, artistically set with beautiful, bright silver, and with well-coloured gold, and with other precious stones. He placed his blue, sharp-edged, rich-hilted sword at his convenience, and his strong, triumphant, wonderful, firm, embossed shield, of beautiful devices, upon the convex slope of his back. He grasped his two thick-headed, wide-socketed, battle spears, with their rings of gold upon their necks."—See "*Cath Mhuighe Leana*," published by the Celtic Society, p. 111.

Of the same class, both in style and description, is the following account, written in 1459, of Donagh Mac Namara, chief of Clann Cuilen, in Thomond, harnessing himself for battle:—"His noble garment was first brought to him, viz., a strong, well-formed, close-ridged, defensively-furrowed, terrific, neat-bordered, new-made, and scarlet-red cassock, of fidelity; he expertly put on that gold-bordered garment [or cotun], which covered him as far from the lower part of his soft, fine, red-white neck, to the upper part of his expert, snow-white, round-knotted knee. Over that mantle he put on a full-strong, white-topped, wide-round, gold-bordered, straight, and parti-coloured coat of mail, well-fitting, and ornamented with many devices of exquisite workmanship. He put on a beautiful, narrow, thick, and saffron-coloured belt of

highly finished as the two others. They have all long, flowing hair; two are bare-headed; two wear round hats with up-



Fig. 200.

turned brims,* and the fifth is crowned with a peculiar head-dress, possibly belonging to the game, and decorated with

war, embellished with clasps and buckles, set with precious stones, and hung with golden tassels; to this belt was hung his active and trusty lance, regularly cased in a tubic sheath, but that it was somewhat greater in height than the height of the sheath; he squeezed the brilliant, gilt, and starry belt about the coat of mail; and a long, blue-edged, bright-steeld, sharp-pointed, broad-sided, active, white-backed, half-polished, monstrous, smooth-bladed, small-thick, and well-fashioned dagger was fixed in the tie of that embroidered and parti-coloured belt; a white-embroidered, full-wide, strong, and well-wove hood (*rǫgabál*) was put on him over his golden mail; he himself laid on his head a strong-cased, spherical-towering, polished-shining, branch-engraved, long-enduring helmet; he took his edged, smooth-bladed, letter-graved, destructive, sharp-pointed, fight-taming, sheathed, gold-guarded, and girded sword, which he tied fast in haste to his side; he took his expert, keen-pointed, blue-coloured, and neat-engraved dart in his active right hand, in order to cast it at the valiant troops, his enemies; and last, he took his vast-clubbed, strong-eyed, straight-lanced, fierce-smoking, and usual spear in his left, pushing and smiting therewith."—See O'Donovan's Introduction to the Archæological edition of the Battle of Magh Rath, p. 13.

Our Irish historians have not done much towards the elucidation of early national costume, and no native novelist has yet appeared with the Scott-like power of blending fiction with fact, or fusing history with romance. One of the few attempts at the introduction of Irish costume into such a work is that made by Maturin, in his romance of "*The Milesian Chief*,"—vol. i., p. 127.

* In the sketch of the Irish Court of Exchequer, engraved from an original drawn in the reign of Henry IV., which is in the Red Book in the Chief Remembrancer's

three feathers. The external figures are represented in the act of throwing rings or quoits, and the central one is armed with a short, straight sword, like No. 158, on Tray **II**, in the Collection of Iron Articles. Although but rudely sketched, this group possesses much character, and is, most likely, accurate in costume.

Upon the reverse side, the ornamental engraving is peculiarly Irish. This bone, which is $19\frac{1}{4}$ inches long, $11\frac{1}{4}$ wide, and $\frac{1}{4}$ thick, was found in the neighbourhood of Swords, county of Dublin. The figures are drawn to scale, and in the original the tallest is $2\frac{3}{4}$ inches in height.

On the old seal of the Corporation of Dublin there are several figures, whose costume, possibly that of the fifteenth century, merits inspection. Enlarged drawings of three of these, figured below, from gutta percha impressions in the Academy's collection, afford examples of the dress, arms, and musical instruments of that period. The first (Fig. 201) is that of the steersman seated in the stern of the ancient galley,



Fig. 201.



Fig. 202.



Fig. 203.

which forms a portion of the City Arms; and in which, figures representing the Mayor, the Recorder, and the Corporation cup-bearer, are seated. The head-dress is evidently the hood or cowl of the ancient cochall cloak. The second illustration (Fig. 102) is that of a soldier firing a cross-bow from the

office, two of the figures, apparently officers of the court, wear hats similarly shaped. See "Proceedings and Transactions of the Kilkenny and South-East of Ireland Archaeological Society," vol. iii., p. 46.

top of one of the turrets over the city gate. His arm projects from the surcoat commonly worn at that period, and on his head is a conical cap or helmet, strengthened with radiating bars of iron, and in shape combining the form of the Phrygian cap, the high barread, and the pointed galloglass helmet.* The mode of pressing the spring trigger of the cross-bow is well shown in the old seal, which exhibits much greater accuracy both in design and execution than the modern one now in use. The third figure (103), which wears a cap somewhat similar to the foregoing, is that of a warder on the topmost tower, blowing a short, curved horn. Other figures, bare-headed, are represented on the lower towers, blowing long and nearly straight horns.†

The caricatures attached to Derricke's doggrel "Image of Ireland," written in 1578, apparently to pander to the worst tastes of the times of Sydney, Fynes Morrison, and Spenser, are not of much value as specimens of the costume of the "Irish Wood-Kearne;" they were drawn to ridicule.‡ In these drawings, published in 1581, we find four varieties of costume. The English soldiers are depicted with breastplates and head-pieces of iron. The Irish peasantry wear two different kinds of dress: in one we have, in the words of the author, "the coate of strange device which fancie first did breade,"—the jerkin with short skirts having "pleates*set thicke abot" the waist, and open-work sleeves after the Spanish fashion. Beneath the jacket depend the plaits of what appears to be the shirt, hanging like a kilt, "with pleates on pleates as thick as pleates may lyc, whose sleeves hang trailing doune almost unto the shoe." Other figures of the "meer Irish karne"

* A precisely similar cap covers a figure in the "Norman dress of the twelfth century, from Harl. MS., 1526 or 1527." See Fosbrook's *Encyclopedia of Antiquities*, vol. ii., p. 835.

† This seal has been engraved in Malton's *Views of Dublin*, and there is also a rude representation of it in the *Dublin Penny Journal*, vol. ii., p. 4.

‡ See the *Somers Collection of Tracts* edited by Sir Walter Scott in 1809, vol. i.

given by Derricke, are only clad in the cloak or mantle, and some are armed with galloglass axes. The Irish chieftains are all in long loose cloaks, deeply fringed round the neck, and down the breast, wear chequered vests, and have tall, conical barread caps, also cross-barred, and covered with plumes of cocks' feathers. The Irish cavalry are clad in shirts of ring-mail, and are armed with long spears, broad-pointed falchion-shaped swords, and small round shields.

Of about the same period is the unique print said to be "drawn after the *quicke*" now in the Douce collection of the Bodleian Library, for which painting a number of Irish chieftains were, it would seem, good enough to stand in melodramatic attitudes, with drawn swords and uplifted poniards, in the act of stabbing each other, to be sketched by the artist! Although the legs and feet are bare, their jackets are beautifully ornamented, and they are enveloped in long flowing robes and voluminous shirts. Their swords, however, are Grecian in the blade, and Roman in the handle. If such were used in the time of Elizabeth, no vestige of them has come down to the present day, and it is not likely that the Irish bronze, leaf-shaped sword, which some of these weapons resemble, was in use so late as three centuries ago.

As stated at page 304, most of our sculptured sepulchral monuments of note, of a later date than the thirteenth century, are those of Anglo-Irish. Still, there are some others which illustrate native costume, and, of these, one of the most remarkable is the effigy of O'Cahan, styled "Cooe-na-ngall," in the old church of Dungiven, county of Derry, dressed in a tunic or surcoat, which covers his armour, and wearing a high barread-shaped steel cap or helmet. This chieftain died in 1385.*

* A drawing of the tomb of Cooe-na-ngall was engraved for the intended Ordnance Memoir of the county of Derry, for a copy of which the author is indebted to General Larcom, R. E. The monument is also figured in the Dublin Penny Journal, vol. i., p. 405. Neither of these, however, exhibits the costume of the chieftain so well as an original drawing kindly lent the author by Mr. G. V. Du Noyer.

Of the same class of tomb is that of Donough O'Brien, King of Thomond, in the Abbey of Corcomroe, in the county of Clare.* He was killed in 1267, and is represented in a loose chequered mantle, which reached below the knees. The tombs of the O'Conors, in the Abbeys of Sligo and Roscommon, and the monuments at Kilcullen, county of Kildare, also afford specimens of Irish costume. But as most of the effigies on Irish tombs of the fifteenth and sixteenth centuries are those of mailed soldiers wearing the armour common to their rank, and are not peculiarly Irish, they do not serve to illustrate this part of the Catalogue.

Of the same class of monuments as the foregoing is that of Richard de Burgo, "The Red Earl of Ulster," in the Abbey of Athassel, county of Tipperary, who died in 1326. Of this example of the civil costume of the nobility of Ireland during the early part of the fourteenth century, Mr. Du Noyer says: "The effigy represents the Earl without any cap or covering on the head; the hair is divided on the forehead, and falls over the ears in short curls, whilst on the upper lip are seen moustaches. The dress consists of a loose robe girded around the waist, and falling to the ankles in straight folds. The shoulders are covered by a small cape or tippet, which is fastened to the breast by a circular brooch. This cape is apparently attached to a mantle which falls over the left shoulder."† This was probably his official, and not his domestic dress.

Without a knowledge of our early costume, such as that sketched in the foregoing section, we could not well understand the uses and mode of wearing many of those ornaments and weapons described in the following pages.

The dress of the galloglass, or Irish foot-soldier, of the

* See the Dublin Penny Journal, vol. ii., p. 341, and also Mr. Samuel Ferguson's paper on "Clonmacnoise, Clare, and Aran," Part ii., in the Dublin University Magazine for April, 1853, vol. xlii.

† See Archaeological Journal, vol. ii., p. 124.

fifteenth and sixteenth centuries, will be considered in the description of the Iron Collection.

We fortunately possess one full suit and several fragments of woollen clothing in the Academy's Collection. Figure 204, drawn the natural size, from a portion of thick, coarse, but soft woollen cloth, of a mottled brown colour. No. 7, in Rail-case H, in the southern gallery, presents us with an example of one of the most ancient specimens of native weaving which has come down to modern times. It is woven with a twill, and, when carefully examined in a good light, the warp is found to be composed of

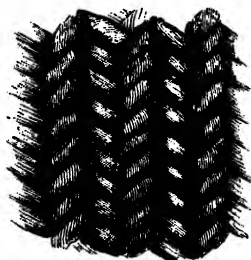


Fig. 204.



Fig. 205.

three plies twisted together, while the weft consists of the untwisted woollen staple. This remarkable peculiarity of the twill or diaper resembles so exactly that figured in the cloak of the "Wild Irishman," engraved in Speed's map of 1610, that a facsimile thereof is placed in juxtaposition with it (Fig. 205), which likewise shows the glibb-fashion of wearing the hair, and also the kind of leggings or long boots used by the peasantry at that time.* The piece of cloth figured above, and which appears

* "The men wore linen shirts, exceedingly large, stained with saffron, the sleeves wide, and hanging to their knees, straight and short trusses, plated thicke in the skirts, their breeches close to the thighs; a short skeine hanging point downe before, and a mantle most times cast over their heads. The women wore their haire plated in curious manner, hanging down their backs and shoulders, from under foulden wreathes of fine linnen, rolled about their heads, rather loading the wearer than delighting the

to have been part of a cloak or coarse rug mantle, was discovered in 1848, in Carne bog, parish of Coolbanagher, Queen's County, and was—*Presented by the Rev. Sir Erasmus Borrows, Bart.*

Although Spenser denounced the mode of wearing the hair in rather disparaging terms, and Speed represented it as above in Fig. 205, their exaggerations may be corrected by reference to the accompanying figure, drawn by a native artist in 1400.



Fig. 206.

It is an accurate representation of the uncovered head and yellow flowing locks of the second archer in the Knockmoy fresco, already described, and accords with the description of O'Neill's galloglasses, who accompanied their chief to the court of Elizabeth.

In the year 1783 the Countess of Moira gave a description of a female dress, of coarse woollen material, found in a bog in the county of Down; and Mr. R. Lovel Edgeworth also recorded the discovery of a woollen coat fifteen feet below the surface of a turf-bog in the county of Longford, along with some iron arrow-heads (see *Archæologia*, vol. vii., pp. 90, 111), but no vestiges of either are now known to exist.

In 1824, a male body, completely clad in woollen garments of antique fashion, was found in a bog, six feet beneath the surface, in the parish of Killery, county of Sligo. In 1843 the dress of a female, also in the costume of some centuries back, was dug out of a bog in the county of Tipperary, and in 1847 a woollen cap was discovered in the county of Kerry. From these articles, all of which are in an astonishingly

beholder; for, as the one was most seemely, so the other was unsightly; their necks were hung with chaines and carkaneths, their arms wreathed with many bracolets, and over their side, garments of slagge rug mantles, purfled with a deep fringe of divers colours; both sexes accounting idleness their only liberty, and ease their greatest riches." See "*The Theatre of the Empire of Great Britain, presenting an exact Geography of the Kingdom of England, Scotland, Ireland, and the Isles adjoining.*" By John Speed. London, 1611." The Map bears this inscription, "Performed by John Speede, and are to be sold in Pope's-head-alley, by John Seedbury and George Humble, and privileged A. D. 1610."

perfect state of preservation, and placed in the first compartment of the southern gallery of the Museum, we can form a very good idea of our ancient dress and manufactures of about the fifteenth and sixteenth centuries. No weapon was discovered near the body found in the county of Sligo, but a long staff lay under it, and attached to the hand by a leather thong was said to have been a small bag of untanned leather, containing a ball of worsted thread, and also a small silver coin, which was unfortunately lost. The head-dress, which soon fell to pieces, is said to have been a conical cap of sheep-skin, probably the ancient *barread*.* So perfect was the body



Fig. 207.

when first discovered, that a magistrate was called upon to hold an inquest on it. In the accompanying figure, drawn from a photograph of a person clad in this antique suit (except the shoes, which are too small for an adult of even medium size) we are enabled to present the reader with a fair representation of the costume of the native Irish of about the fifteenth century. The cloak or mantle, composed of brown soft cloth, closely woven with a twill (but not so fine as that in the coat), is straight on the upper edge, which is nine feet long, but cut into nearly a segment of a circle on the

* "But though the Irish," says Lynch, "wore their hair flowing down their shoulders, the head was not uncovered. They wore a cap, precisely the same head-dress as that of the Gauls, namely, an oblong cap, of somewhat conical form, which in Irish is called *Barred*, probably from the Latin word, *Biretum*, though its derivation could also be Irish, from the Irish *Barr*, a cone, and *Eda*, a dress, which, in combination, signify a conical covering or dress."—*Cumbrænsis Eversus*, cap. xiii., pp. 220.

lower. In the centre, where it is almost four feet across, it consists of two breadths, and a small lower fragment; the upper breadth is fifteen, and the lower twenty inches wide. It is a particularly graceful garment, and is in a wonderfully good state of preservation.

In texture, the coat consists of a coarse brown woollen cloth or flannel, with a diagonal twill, or diaper. In make it is a sort of frock or tunic, and has been much worn in the sleeves. The back is formed out of one piece, extending into the skirt, which latter is two feet long, and made very full all round, by a number of gussets, like the slashed doublets of Spanish fashion. It measures 8 feet in circumference at the bottom. Gussets, broad at the top, are also inserted between the back and breast, below the armpits, and meet the gores of the skirt gussets at the waist. It is single-breasted, and has fourteen circular buttons ingeniously formed out of the same material as the coat itself, and worked with woollen thread. The breadth of the back is 18 inches, which was probably the width of the cloth. The collar is narrow, as in some of the most fashionable frock-coats of the present day. The sleeve consists of two portions joined at an angle across the elbow, below which it is open like that of the modern Greek or Albanian jacket, and has twelve small buttons extending along the outer flap. Where the sleeve joins the back, a full gusset is inserted, and the cuff consists of a slight turn-in, an inch and a half wide. The inside and lower portion of each sleeve has been much worn, and is patched with a coarse felt-like material of black and orange plaid, similar to that in the trowsers found on the same body. All the seams of this garment are sewn with a woollen thread of three plies.

The trowsers or trews are of a coarser material than the coat, and consists of two distinct parts, of different colours and textures. The upper is a bag of thick, coarse, yellowish-brown cloth, 19 inches deep, doubled below, and passing for some way down on the thighs. It is sewn up at the sides, and made

full behind. The legs are composed of a brown and orange yellow (or saffron colour) plaid, in equal squares of about an inch wide, and woven straight across; but each leg-piece has been cut bias, so as to bring the diagonal of the plaid along the length of the limb, and it is inserted into a slit in the front of the bag, extending inwards and upwards from the outer angle. The legs are as narrow as those of a pair of modern pantaloons, and must have fitted the limbs tightly; they are sewn up behind, with the seam outside, while in the bag portion the seams are inside. Below, the legs are scoloped or cut out both over the instep and the heel, the extremities coming down to points at the sides. The angle in front is strengthened by an ingenious piece of needlework like that used in working button-holes. It is said that these ends were attached behind to the uppers of the shoes, Nos. 16 and 17, described at page 291. All the sewing in this garment was also effected with woollen thread, but of only two plies. These close-fitting trowsers are evidently the ancient Celtic *braccæ* or chequered many-coloured lower garment, the *triubhais* or *truis*, now drawn from nature, and explaining by the way they were attached to the sacculated portion above, and the shoes below, many hitherto unaccountable expressions in Giraldus, especially when he says, "The Irish wear breeches ending in shoes, or shoes ending in breeches." Archdeacon Lynch, in his *Cambrensis Eversus*, writing in 1662, says on this subject, "The breeches used by the Irish was a long garment, not cut at the knees, but comprising in itself the sandals, the stocking, and the drawers, and drawn by one pull over the feet and thighs. [They] cover the groin, but not sufficiently, if the long skirts of the tunic were not wrapped over them."—(Vol. II., chap. iii., p. 209, Rev. M. Kelly's Translation for the Celtic Society.)

All the foregoing articles, numbered 1, 2, and 3, in the Southern Gallery, together with the shoes found upon the body, were—*Presented to the Academy by His Grace the Duke of*

Northumberland, who purchased them with the collection of the late R. C. Walker, Esq., Q. C.

A *woollen cap* of a knitted or woven texture, circular in shape, like the Scotch bonnet, and of a lightish-brown or tan colour, was found ten spit deep under the surface, in 1847, at the butt of a large tree in a bog near Ballybunnion, county of Kerry, between Knockanforais mountain and the sea. It is marked No. 4 in the same case as the other woollen garments, in the southern gallery, and was *presented by William Smith O'Brien, Esq.* When it was found, it is said to have had a gold band round it.

On the chimney-piece of the old castle of Dunkerron, county of Cork, near Kenmare, there is a sculpture of the sixteenth century, representing, it is supposed, O'Sullivan More, whose dress is a "close-fitting tunic, belted round the waist, and extending to half-way above the knees; his cap very closely resembled a Glenagarry bonnet in the twisted band surrounding the lower part over the forehead; what appears to be a small feather hangs gracefully drooping from the back of the cap."*

The foregoing description of early Irish costume mostly refers to male dresses. We have no pictorial representations of women's costume earlier than the fourteenth or fifteenth centuries, from which period about to the middle of the last century a few sculptured figures on tombs afford examples of the Anglo-Irish female dress of the upper classes. Without entering minutely into the subject, the costume on these effigies may be divided into the loose flowing robe, and the stiff-plaited skirt and tight-fitting boddice. Of the former class, examples may be seen in the tombs of females at Cashel, figured by Mr. Du Noyer, in vol. ii., p. 127, of the *Archæological Journal*, and which present the remarkable peculiarity of being cross-legged. Of the latter we have examples

* See Mr. Du Noyer's Paper in the *Kilkenny Archæological Journal* for March, 1859, p. 291.

in the St. Lawrence tomb, in the old Abbey of Howth; the tomb of the Butlers at Clonmel; in the Fitz Eustace monument at Kilcullen; and in many other localities throughout the country. The greatest variety in female costume consisted in the head-dress, which from time to time partook, both in dimensions and design, of the ruling fashions of the day.

Of the second form of dress, we possess a specimen of coarse woollen cloth, in a wonderful state of preservation—see No. 5, in the first compartment of the Southern Gallery. It consists of a boddice with a long waist, open in front, and attached to a full plaited skirt, not unlike that figured by Lady Moira, and already referred to at page 326. The skirt, which resembles the Albanian fustanell, consists of several narrow breadths, gathered into small plaits at top, and spreads into a broad quilling at the bottom, each plait being stitched on the inside to preserve the form, and continue the fulness from the waist throughout. The bottom of this skirt at present measures $22\frac{1}{2}$ feet, and consists of ninety-two plaits, each about 3 inches wide at the bottom, and 2 at the top; the quilling being so arranged as to bring the joining of each pair of breadths into a plait. In texture, the cloth of this curious piece of costume is somewhat coarser, thicker, and harder, and its colour a much darker brown than any of the other woollen garments in the collection. It was found, in the spring of 1843, in a bog near Shinrone, county of Tipperary, and was procured by Dr. Aquilla Smith, for the late Mr. R. C. Walker, from whose collection, when purchased *by the Duke of Northumberland*, it was presented to the Academy.

BONE CLOAK OR MANTLE PINS (*Dealga*).—The Academy possesses one of the largest collection of cloak and mantle pins of animal material which has yet been made in any part of Europe. It is arranged upon Trays **A** and **B**, in the End-case of the Eastern Gallery; on Trays **C** and **D** in the South-

ern Gallery; in Rail-case H; and on the "Find" Trays A and B in the lower compartment of the Museum. It now amounts to no less than 280 specimens.*

Taking bone and horn as preceding metal in the ordinary process of art consequent upon human culture and civilization, we may suppose that some of the original designs of breast-pins were fashioned in this material, although few of the specimens in the Museum can be of as great antiquity as those of metal. Many of these bone pins would also appear to have been used as piercers, and some as needles and bodkins, but the great majority of them were evidently employed as fasteners.

As stated at page 312, a large iron pin or skewer, having a decorated or looped head, is used by the lower classes to fasten their cloaks, so that this kind of fibula may be said to have come down to the present time.

These bone pins and bodkins vary in length from two to nine inches, and present divers patterns and forms of ornamentation, but were all evidently used as fasteners for the cloak or mantle, or for holding up the hair. Some of them are formed out of the bones of fowl; others, of the fibulæ, or small leg-bones of quadrupeds; many are perfectly plain; and others decorated at the head, where the natural enlargement of the bone afforded surface for artistic display. About one-third of these varieties have been perforated at the top, and were possibly attached to the person by a string, or had a ring or some form of ornament passed through the aperture. Some of these, as Nos. 41, 42, 108, and 114, on Tray A, have enlargements about half-way down the shaft, as if for retaining them in position, after they had been passed through a loop or eyelet-hole in the soft woollen textures of the mantle or coarse outer

* *Dealg* is also a thorn, as well as a skewer pin or bodkin. Some of these pins and other bone articles were procured by the Academy after the original arrangement and registration had been completed, and therefore do not follow in successive order on the different Trays.

garments. Crannoges and street-cuttings have been the fruitful mines from which these small bone articles have been excavated. The simplest form of pin, as shown in the accompanying cut, figured from No. 97, on Tray A, is drawn the natural size. The head is very rude, but perforated, and ornamented by diagonal lines. In the six following illustrations we have typical examples of the most curious bone pins in the Collection. Fig. 209, No. 19, on Tray A, is a large, dark-coloured bone pin, 9 inches long, and $1\frac{1}{2}$ thick at the head, found in the River Shannon, at Grosses Island, county of Leitrim, and—*Presented by the Shannon Commissioners*. What its precise use may have been, has not yet been fully determined. Fig. 210, No. 110, on Tray A, is the most highly decorated pin in the Collection; it is flat, $7\frac{1}{2}$ inches in length, and figured all over the shank as well as the head, where it is perforated with five holes; it affords a good example of the style of circular domino ornament common to nearly all the bone articles in the Collection. Fig. 211, No. 114, on the same Tray, is $8\frac{3}{4}$ inches in length, and resembles, in the lower portion, a long

Fig. 208.
No. 97.

Fig. 209. No. 19.

Fig. 210. No. 110.

Fig. 211. No. 114.

Fig. 212. No. 304.

narrow knife-blade; it is highly decorated all over the blade and top. Figs. 212 and 213, from Nos. 304 and 305, on Tray C,

are not only very curious specimens in themselves, but, having attached heads, afford a clue to the uses of some of the small decorated plates upon Tray **B**, which came from the Ballinderry crannoge, the same locality where these were found. The first is $3\frac{1}{2}$ inches long, and has an oblong bone head,



Fig. 213. No. 305.



Fig. 214. No. 13.



Fig. 215. No. 348.

ornamented with four indentations, as shown in the cut. The shank is provided with a shoulder, upon which the top plate rests. No. 305, in the accompanying cut (Fig. 213), is $4\frac{1}{2}$ inches long, has a circular head one inch in diameter, and is fastened to the shank in the same manner as the foregoing. Several pins are curved in the blade or shank (see Nos. 56 and 102, on Tray **A**; 62, 63, 69, 70, and 72, on Tray **B**, and 311, on Tray **C**). One of the most remarkable specimens of this variety is No. 13, in Rail-case **H**, here figured the natural size (Fig. 214). The head is exceedingly well carved into the representation of a grotesque sitting figure, like some of those architectural embellishments seen in mediæval buildings. It was found in a field near Newbridge,

county of Kildare, and was—*Presented by Frederick Groome, Esq.* (See Proceedings, vol. vii., p. 121.) Fig. 215, No. 348, on Tray C, is square in the shank, and has a looped head, through which is passed a ring, also of bone. This pin, which is $5\frac{1}{2}$ inches long, is highly decorated all over, and so sharp both in the carvings and at the angles, as to lead to the belief that it had never been in use;—it was found in the Ballinderry crannoge, county of Westmeath, together with Nos. 349 to 353, and 356 and 357, also arranged on Tray C. The similarity of design and execution, as well as the apparent freshness of these articles, lends probability to the supposition that a manufacture of them existed in that locality. No other bone pins of this class have heretofore been recorded.

Varied as are the forms of these mantle and hair-pins, taken as a portion of the great collection of articles of all materials in the Museum, denominated brooches, they do not present more variety, nor a greater degree of inaptitude, than objects manufactured for a like purpose in the present day. The following is a catalogue of all the bone pins in the Collection, except those upon the “Find” Trays, already referred to at page 332.

Tray A, second row.—No. 41 is a bone pin, 9 inches long, much ornamented, with a flat head, and a protuberance on the centre of the shank. No. 42, ditto, is $7\frac{1}{2}$ inches long, with a round, ornamented head, and a square projection, perforated in the centre of the shank. Nos. 43 to 50 are bone pins, averaging $5\frac{1}{2}$ inches long. No. 51 is a rude bone pin, apparently one of the long bones of a fowl. It was found in Clonfree crannoge, and was—*Presented by the Rev. Peter Brown.* Nos. 52 to 59 are eight bone pins, averaging 5 inches in length. No. 56 is curved on the shank like No. 102, and Nos. 62, 69, 70, and 72, on Tray B. Nos. 57 and 58 are enlarged at the points. No. 60 is $3\frac{3}{4}$ inches long, and was found at Magherally, county of Donegal. Nos. 61 to 73 decrease gradually in length from $3\frac{3}{4}$ to $2\frac{3}{4}$ inches. No. 74 was found with No. 83, in

Clonfinlough crannoge, and—*Presented by the Board of Works.* Nos. 75 to 82 are bone pins of the smallest size on the Tray. (All the other specimens, from 79 to 115, are perforated at the head.) No. 79 is a bone needle or bodkin, about 4 inches long. No. 80, a perforated bone pin, found with No. 96 in Ardakillen crannoge, and—*Presented by the Board of Works.* Nos. 81, 82, and 83 are small perforated pins. No. 84 is a small bone needle. No. 85 is a circular-headed pin, $3\frac{1}{4}$ inches long. No. 88 is very broad at top, and $3\frac{1}{2}$ inches in length. Nos. 87 to 97 are bone pins, perforated at top. No. 98, which is 4 inches long, has a copper ring passed through the aperture in the head. Of the remaining seventeen pins, from 99 to 115, which vary from 4 to 9 inches in length, No. 102 is remarkable for its curvature and square head. No. 108 is also square-headed, and has a rise in the centre of the shank. No. 110 is shown in the woodcut, Fig. 210, p. 333. No. 113 swells at the point like 57. No. 114 has the shank formed like a knife-blade, with a rise near the top, (see Fig. 211, p. 333). The majority of these pins were found in the Strokestown and Ballinderry crannoges, already described at page 226, &c., and were purchased by the Academy from persons residing in their neighbourhoods.

For the catalogue of other articles on Tray **A**, see pages 258, 262, and 273, &c. &c.

Tray B, Second and third rows.—On this Tray have been arranged two rows of pins, divided in the centre by a collection of miscellaneous articles. They amount to 153, and are numbered from 33 to 185. In length, they vary from little more than 1 to 5 inches, and are, for the most part, undecorated, and generally inferior in workmanship to those on Tray **A**. A few are curved, as stated at p. 334, and twenty-eight are perforated. No. 68 is worthy of observation, from its having a knotted fillet round the head. The majority of these pins came from the crannoges in the neighbourhood of Strokestown. Nos. 33 and 34, from that locality, were—*Presented by Dr. R. R. Madden*, and No. 37 by *A. Lawder, Esq.* (See Proceedings, vol. v., p. 219.) Nos. 42, 57, 61, 62, 79, 97, 164, and 139, were found in the Ardkillen crannoge (see p. 226). Nos. 66 to 72, and 75, 78, 80, 81, 82, 83, and 87, were found in Christchurch-place, Dublin city. All the other pins on this Tray were

obtained from some of the crannoges mentioned above, and described at page 225.

For the catalogue of the other articles on Tray B, see pages 264 and 274, &c.

Tray C, Miscellaneous Bone Articles, Pins, Knives, and Ornamented Plates.—The top row consists of fifteen pins, numbered from 304 to 318, and varying in length from the first, which is a little more than 3 inches, to No. 311, which is above 9 inches long. Nos. 304 and 305 are small bone pins, having decorated and attached heads (see Figs. 212, on p. 333, and 213, at p. 334). Nos. 306 to 309 have oblong heads, perforated and ornamented. No. 310 is $8\frac{1}{2}$ inches long, and has a round, perforated head. No. 311 is $9\frac{1}{2}$ inches in length, and ornamented with small indentations all over the shank as well as the head. No. 312 has a plain, square, perforated head. No. 313, ditto, the shank ornamented. No. 314 is a plain bone pin, $6\frac{1}{2}$ inches long, with a perforated head. No. 315, ditto, with oblong, ornamented head. No. 316 is a very rude bone pin, $4\frac{1}{4}$ inches long, with a perforated head. No. 317, ditto. No. 318, ditto, and only $3\frac{3}{4}$ inches long. All these bone pins, together with the other articles on this Tray, to No. 345, were found in the Ballinderry crannoges, described at p. 226, and were purchased by the Academy from a collector in the summer of 1858. No. 319 is a bone knife, $7\frac{1}{2}$ inches long, decorated upon the blade and handle.

Here the bone plates, numbered 320 to 345, described at page 342, intervene, and, with No. 319, occupy the second, third, and fourth lines on this Tray. Nos. 346 and 347 are two thin, bone pins, each about 8 inches long, formed out of mammal fibulæ, in which the natural enlargements of the bones at one extremity have been formed into oval heads. Their shanks have been scraped down to very thin, fine spikes. They are of the natural colour of the bone. No. 348, and the five following pins, procured, through a collector, from the Ballinderry crannoge, county of Westmeath, in March, 1860, present an entirely new character of bone pin, and no other specimens, resembling them either in form or ornamentation, have come into the Museum. They are all stained of a dark colour, apparently by artificial means, and four of them have bone rings, thinned at one point for passing through a slit in the

looped head, thus showing that this loop is not a turn over of the bone when in a softened state, or owing to any chemical process. No. 348, figured on page 334, represents all the peculiarities of these pins so faithfully as not to require any further description. No. 349, a dark-coloured, round pin, $5\frac{1}{2}$ inches long, decorated in the shank, and having a square-edged ring-head like the foregoing. No. 350, ditto, 4 inches long, with a four-sided, ornamented shank, and a ring passed through a loop in the head. No. 351, ditto, 5 inches long, has a ring passed through the head. No. 352, a dark-coloured, circular, bone pin, $4\frac{1}{2}$ inches long, in which the hole for the head appears to have been cut through, without a slit for passing in the ring. No. 353, a dark-coloured, bone pin, 5 inches in length, decorated, square in the shank, and having a double perforation at the top, like some of the bronze pins on Tray **XX**. No. 354, a plain, bone pin, perforated, and $2\frac{1}{2}$ inches long. No. 358 and 359, a dark-brown-coloured bone knife and fork, referred to at page 267; the former is $6\frac{1}{2}$, and the latter $7\frac{1}{2}$ inches long. They are in the most perfect state of preservation, and do not appear to have ever been used; they were found, along with the bone pins in the same row, in the Ballinderry crannoge, and, from the sharpness of the angles and the extreme similarity in the ornamentation, it would seem that there was a manufactory of such articles there. Their handles are square, and decorated with the domino-ornament. The fork has five prongs, and measures $1\frac{1}{4}$ inches across the blade. The handle of the knife bears some resemblance to the large, hollow bone, No. 36 on Tray **A**, figured and described at page 343. The blades of both these articles are formed of separate pieces, fastened by tangs into the handles, and originally secured with cross-rivets. No. 360, a bone bead, $\frac{1}{2}$ an-inch wide. No. 361, ditto, $\frac{7}{8}$ ths in diameter; both were found in the River Glyde, below Castle Bellingham, county of Louth, and were—*Presented by the Board of Works.* (See Proceedings, vol. vii., p. 180.)

Pendants of the teeth of animals, decorated bones, shells, coral, and glittering objects of all kinds, have been used by the human race, either singly, or attached to necklaces, in all countries from the earliest period. A few objects, apparently

belonging to this variety of ornament, may be seen on the centre of Tray B, numbered from 194 to 198, both inclusive. That represented the full size in the accompanying illustration is of ivory, perforated at the small end, carved and pleasingly decorated on the sides, like some of our gold ornaments.

The following is a list of the other articles of this

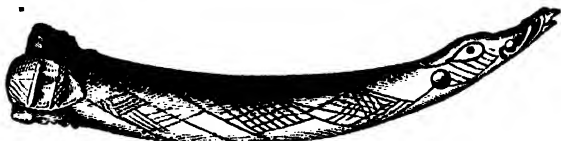


Fig. 216. No. 197.

Nos. 194 and 195 are curved walrus tooth pendants, each about $4\frac{1}{2}$ inches long, and perforated at top; they were found in Ballygoran Bog, parish of Laraghbryan, county of Kildare. No. 196 is a perforated bear's tusk. No. 197, the ivory pendant, 3 inches long, figured above (216). No. 198, a piece of highly polished bone, 4 inches long, and $\frac{1}{4}$ inch thick, like a slender knife handle, but solid. It was found in one of the chambers of the great tumulus at Dowth, on the Boyne, county of Meath, opened in 1847.

Beads and rings of bone and horn have been found in several of our crannoges, but have not been preserved by the collectors as well as the pins and combs. At the bottom of Tray C may be seen two small turned bone beads, Nos. 360 and 361 (see page 338). Such objects are generally barrel-shaped, and either formed parts of necklaces, or "beads" used for religious purposes.

SPECIES VI.—AMUSEMENTS.

Chess, *Fithcheall*, was a game well known to the ancient Irish, and is frequently alluded to in our histories; but there are not as yet in the Museum of the Academy any specimens of ancient chess-men sufficiently characterized by their carvings, to determine their precise use, although the bone junks forming the last row on Tray B, from No. 287 to 303, may have been used as pawns in that game. These seventeen

pieces of bone, which from their smoothness appear to have been much handled, average about an inch in height. In Dr. O'Donovan's introduction to the "Book of Rights"* may be found many curious references to the game of chess amongst the Irish, and also an engraving of an antique chess-king from the collection of Dr. Petrie. Chess furniture, such as the checkered board, and also the pieces, are frequently referred to in ancient Irish works; and we read that when Muirchertach of the Leather Cloaks carried off the body of Cerbhall, King of Leinster, he caused a chess-board to be formed out of his bones.†

The flat decorated disks, in the penultimate row of Tray B, from No. 264 to 273, both inclusive, were either used as draughtsmen, or employed as marking counters.

SPECIES VII.—MUSIC.

ALTHOUGH the hollow cuticular horns of oxen must have been in common use as musical instruments among the early Irish,‡ the perishable nature of the material would preclude the possibility of those of any great antiquity coming down to the present day; so that the only articles of this species in the Museum of unquestionable use, are the harp-pins found in the Strokestown crannoge, and one of which is here figured the natural size (see No. 2, on "Find" Tray C, on the ground-floor).



Fig. 217. No. 2.

* Chess-men were also enumerated amongst the articles presented by sovereigns to their chieftains in this most interesting historic document,—a work, beyond all others of its class, descriptive of the social condition of Ireland—its state policy—the manners and customs of its inhabitants—their dress and manufactures,—as well as the luxury and artistic tastes of the times to which it refers. See also page 265.

† Annals of Clonmacnoise. See also Miscellany of the Celtic Society, page 161.

‡ O'Sullivan Mór is represented on the sculptured stone at Dunkerron Castle, Co. Cork, blowing a horn of this description. (See "Kilkenny Archaeological Society's Journal," referred to at p. 880.)

The perforated metacarpal bone, No. 39, on Tray A, figured and described among the miscellaneous articles at page 344, may have been part of a musical instrument; but its precise use is as yet undetermined.

SPECIES VIII.—MONEY, AND THE MEANS OF BARTER; and SPECIES IX.—
MEDICINE—

HAVE no representative articles among the antiquities composed of animal materials; and those objects of that class devoted to Religious purposes (SPECIES X.), will be considered under the head of Ecclesiastical remains.

SPECIES XI.—SEPULTURE.

WITH most of the cinerary Urns, where any care has been taken in their removal, or with which we have received a faithful account, fragments of burned bones have been discovered, as already stated in the description of these articles at page 173. Where sufficient anatomical evidence remains, we find that the great bulk of these incinerated bones are human; but in some instances, we have also been able to detect those of both mammals and birds. (See Proceedings, vol. iii., page 262.) In some cases, the bones, both of men and animals, in a partially torrifed state, together with fragments of charcoal, have been found outside the urn in the stone chamber, and occasionally in the ground adjoining; and were evidently the remains of sacrificial ceremonial. A quantity of these incinerated bones, forwarded from time to time to the Academy, and chiefly along with urns, are placed in the wooden model of a tomb in the bottom of the end glass-case of the Eastern gallery (referred to at pages 85 and 268).

SPECIES XII.—MISCELLANEOUS.

AMONG the miscellaneous articles in the collection of manufactured animal remains are eighty thin plates of bone of a great

variety of shapes, and possibly some diversity of purpose. They have been arranged on Tray **B**, from Nos. 199 to 252 inclusive, and on Tray **C**, from Nos. 320 to 345. In length they vary from one to five and a half inches; some are triangular, others nearly square, and several very irregular; but the majority are oblong, and all more or less decorated on the outer smooth, convex surface with a number of circular indentations and dotted lines. Each object has also several perforations; and the accompanying illustrations (drawn two-thirds the natural size) show the great variety which exists in the form of these plates. While in some respects they resemble in size, shape, and ornamentation the small stone articles de-

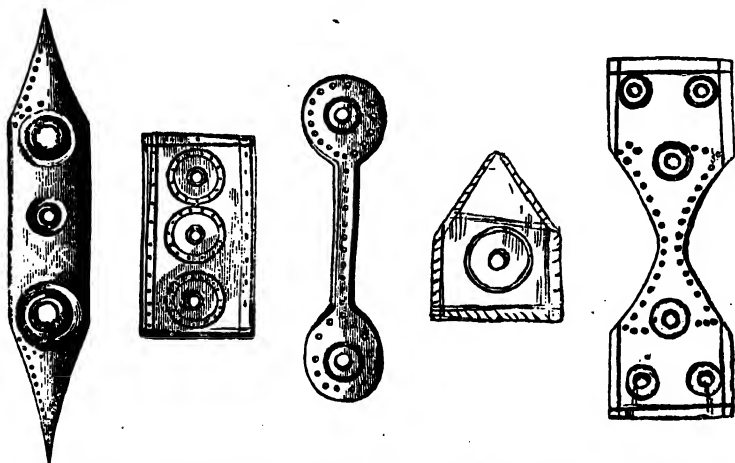


Fig. 218. No. 223. Fig. 219. No. 323. Fig. 220. No. 215. Fig. 221. No. 199. Fig. 222. No. 341.

scribed at p. 125, and which would appear to have been used, either as toys, amulets, or in some description of game, a more probable use may be assigned to these bone plates—that of the decoration of small boxes or caskets. The Abbé Cochet has described similar articles which were found attached to small boxes in excavations recently made in Normandy.*

* *Sepultures Gauloises, Romaines, Franques, et Normandes*. Paris. 1857. P. 244.

One of the rudest articles of this description in the Museum is the spatula-shaped bone, here figured one-half the natural size, and perforated with four holes, as shown in the accompanying illustration, Figure 223. We do not possess any precise information as to the circumstances under which these bone objects were obtained, beyond the fact that the majority of them were procured from the debris of the Ballinderry and Strokestown crannoges.

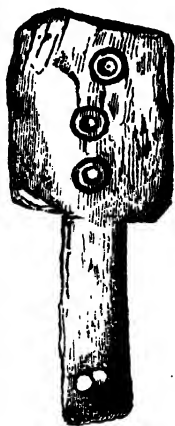


Fig. 223. No. 228.

Amongst the miscellaneous articles upon Tray B is a curious ovoid piece of hard, polished bone, No. 226, shown in the accompanying woodcut (Fig. 224). It is $2\frac{1}{2}$ inches in the longest diameter; is perforated with ten holes of different sizes, and may have been used for passing threads or cords through, either in weaving, netting, or lace working. It was procured along with the bone plates enumerated above. Nos. 229, 230, and 231, on Tray B, are the epiphyses, or centres of ossification on the articulating surfaces of the long bones of animals, and which are unconsolidated with the shaft, during very early life. They are perforated, and may have been used either for ornamental or utile purposes, such as those suggested for No. 226. Nos. 232 to 252 are small decorated bone plates of a dark-brown colour, apparently identical in purpose with those already figured on page 342.

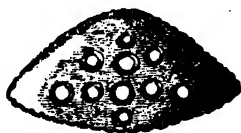


Fig. 224. No. 226.

Although the perforated bone, No. 36 on Tray A, already mentioned at pages 263 and 341, was, in all probability, used as a musical instrument, still, as we want authority for this assertion, it is safest to arrange and describe it among the articles of a miscellaneous or as yet undetermined character. The accompanying figure of this bone is drawn one-third the natural size, the original being 8 inches long. It is apparently

the shank of a deer, is hollowed artificially throughout, and perforated with nine holes, which pass from one side to the other, and are decorated with circular indentations ; the upper



Fig. 225. No. 30.

hole, which is larger than any of the others, is surrounded with a double ring. This bone is likewise decorated with dots and lines. If it was the top member of a lute, or small, rude harp, these holes might have been used for holding the pins to which the strings were fastened.

In Rail-case **H** may be seen three decorated bones, the precise use or object of which being as yet conjectural, they have been placed in this species. Few objects in the Academy can compare with them in interest, and, so far as published records are available, they are unique. No. 28, Fig. 226, a leg bone, probably of a deer, $8\frac{1}{2}$ inches long, covered with carving, and highly polished, was procured from one of the Strokes-town crannoges. No. 29, Fig. 227, is also a leg bone, but stained of a dark-brown colour, apparently from lying in peat, and is in the natural state in all respects, with the exception of the carvings on its side. It was found in the Lagore crannoge, county of Meath, and was procured through Mr. Wake-man. Its polished surface shows how much it had been handled. In addition to the well-cut illustrations represented the natural size by Figures 236, 237, and 238, on page 346, there are various devices traced upon the under concave surface of this bone with a graver or other sharp tool—the original sketches or unfinished drawings of the artist at the time this article was lost. No. 28 has also carvings on the convex side, similar to the foregoing; but the designs are somewhat different, although not inferior in workmanship; the surface of the bone is not, however, in such a good state of preservation as in No. 29. No. 30, Fig. 228, is a fragment of

the scapula of a sheep or deer, carved on the inferior surface; it is 7 inches long, and marked "G. 316" in the old manuscript registry of the Museum. The engravings upon it, although well drawn, are not so carefully executed as on either of the foregoing, and, as may be seen by Figures 239 to 244, on page 347, they are of a totally different character. They are shallower,—the texture and thinness of the bone not per-

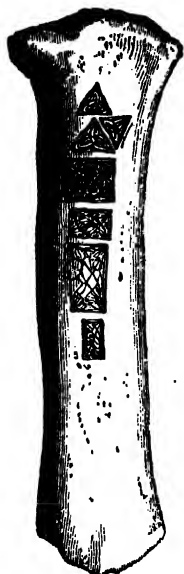


Fig. 226. No. 28.

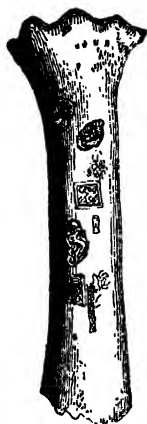


Fig. 227. No. 29.

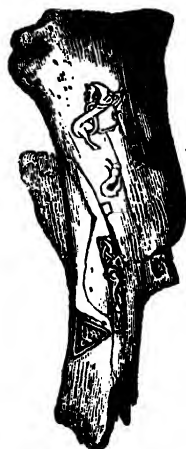


Fig. 228. No. 30.

mitting of deeper cutting. In addition to the carvings shown by Fig. 228, there are several others upon the lower side of the crest of this bone. To those engaged in the study of Irish decorative art these articles are of very great interest. From the carvings on No. 29 may be printed very clear, sharp, and accurate impressions, in the same way that proofs are taken from a woodcut.

While the foregoing illustrations afford us good ideas of these bones themselves, and of the situation, relative position, and comparative size of the carvings, which are all deeply cut in with a graver, the following fac-similes present us with the details, as well as the differences in artistic style, in each va-

riety of ornament. These illustrations are fac-similes of those embossed patterns on No. 28, Fig. 226. They are included

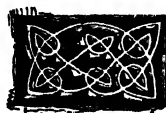


Fig. 229.

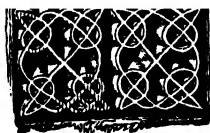


Fig. 230.



Fig. 231.

within straight lines, forming portions of squares or triangles.

A few of the engravings on the bone, marked No. 29 (Fig. 227) are somewhat of the same class of ornament, as shown in the four following cuts, which, with those already described, afford the modern artist good specimens of that peculiar



Fig. 232.



Fig. 233.



Fig. 234.



Fig. 235.

scroll-work and interlacement for which Ireland was distinguished in the middle ages. But others, shown below, are included within deeply indented curved lines, and represent



Fig. 236.



Fig. 237.



Fig. 238.

animals, and that special form of spiral ornamentation and twisted strap-work, believed to be of Celtic origin,—examples of which are to be found in the initial letters and emblazonry of some of our illuminated manuscripts, and of which the Books of Kells and Durrow, already referred to at page 298, as well as some of the Irish manuscripts on the Continent, afford many beautiful specimens.*

* See Dr. Ferdinand Keller's "*Bilder und Schriftzüge in den irischen Manuscripten der Schweizerischen Bibliotheken*," in Transactions of Antiquarian Society of Zurich, 1853.

Upon the blade bone (No. 30, Fig. 228) there are thirteen devices in a more or less finished state, but differing in character and style of engraving from any of the foregoing. The



Fig. 239.



Fig. 240.



Fig. 241.



Fig. 242.

nature of this bone would not permit of as deep cutting as that employed in the two others already described. Three of these, figured above, are triangular, and two of them show that form of knotted interlacement seen in such variety and abundance, not only in our manuscripts, but upon several of our sculptured crosses and metal shrines, or worked into the tracery of early Irish ecclesiastical architecture. The other



Fig. 243.



Fig. 244.

carvings on No. 30 chiefly represent animals, of which the two annexed cuts are highly characteristic.

The artists do not appear to have followed any order or plan in the arrangement of these carvings, but simply chose the hardest and smoothest portions of the bone, and the thickest also when it was necessary to cut in deeply.

Besides the foregoing bone articles, there is, in Rail-case H, the fragment of a scapula, No. 31, probably a portion of No. 30, and which is also rudely marked on the surface.

In considering the object or uses of these decorated bones,

we must fall back on conjecture, that earliest resource in many antiquarian investigations; and the most probable one is that they were intended merely as specimens of the designer's and engraver's art; although it is possible that these patterns may have been transferred to parchment by some process with which we are not now acquainted. Impressions in relief may also have been taken from them by some plastic or soft putty-like substance, although melted metal could not have been used for that purpose without injury to the bone.

Rail-case H—at the commencement of the Southern Gallery—contains a number of articles of a miscellaneous character, which could not well be displayed on Trays. No. 1 is the mineralized horn described and figured at p. 260. No. 2, a powder flask formed out of a flattened cow's horn, and marked with the date 1691. No. 3, a small bone drinking horn, $2\frac{3}{4}$ inches long, from Dunshaughlin: see p. 265. No. 4, a small scabbard, 5 inches long, referred to as No. 1, at p. 279. No. 5, several specimens of deerskin clothing, described and figured at p. 277. No. 6, portions of tied or woven goat's-hair fringe: see p. 295, Fig. 188. No. 7, a fine, woollen, plaited band: see Fig. 189, p. 295. No. 8, two specimens of coarse, woollen cloth, described and figured at p. 295. No. 9, an ornamented bone comb (marked No. 159 in continuation of the numbering of such articles on Tray A) described and figured at p. 271. No. 10, a decorated bone comb, like the foregoing, from Ballinderry (No. 160). No. 11, fragment of a bone comb (No. 161). No. 12, fragment of a bone comb (No. 162). Besides the combs on Tray A, and these in this Rail-case, there are fragments of five others on "Find" Tray A, from Ballinderry, seven on "Find" Tray B, procured from Dunshaughlin, and twenty-two on "Find" Tray D, found in the Strokestown crannoges, now making the entire number of combs, either complete or fragmentary, in the Museum, at this date (June, 1860), to be eighty-two. No. 13, a small decorated bone pin, described and figured at p. 334. No. 14, a plain bone pin. No. 15, a small, circular, bone box, probably the end of a pepper-caster, $1\frac{1}{2}$ inch high, decorated with domino ornament, bottom inserted like that of a mether. No. 16, a thin, flat, decorated bone plate, like those described at p. 342. No. 17, a large,

decorated bone whorl, like those on Tray B. No. 18, ditto, thick. No. 19, ditto, much ornamented. No. 20, a small bone whorl. Nos. 21 and 22, two bone spoons, described and figured at p. 267. No. 23, a bone whorl. No. 24, ditto, turned white by chemical change. No. 25, a decorated bone ring, 1 inch across, and nearly half an inch wide. No. 26, a small bone junk. Nos. 15 to 20, and 23 to 26, were found in the debris of Ballinderry crannoge. No. 27, an oval horn box, shaped like the bottom of a powder horn, $3\frac{3}{4}$ inches long, 2 high, and $1\frac{1}{2}$ broad, ingeniously carved all over with a variety of devices, inter-lacements, and figures of birds and quadrupeds. Some of the tracings are very intricate, and well-executed, although the drawing of the animals is very rude. On one side is the date 1583. The bottom is of timber, fastened in with wooden pegs, some of which have been replaced by iron rivets. It was evidently furnished with a lid, the rivet-holes of which remain round the top edge, and the notches in the margin of the rim show how a portion of the lid might have been opened. No. 28, a decorated shank bone, Fig. 226. No. 29, ditto, Fig. 227. No. 30, a decorated scapula, Fig. 228, p. 345. No. 31 is the fragment of a scapula, also decorated. No. 32, a much-worn, woollen-sewn shoe, 9 inches long. No. 33, ditto, sewn with a thong, 9 inches long. The former was found at Knock-na-common, county of Roscommon; the latter in the bog of the Great Down, four miles east of Mullingar, county of Westmeath, and both *presented by Mr. Richard Murray*. These increase the number of shoes in the Collection to thirty-six.

The total number of articles composed of animal materials now in the Museum (June, 1860), is six hundred.



CLASS V.—METALLIC MATERIALS.

REVIEW having been made of the different articles composed of stone, earthen, vegetable, and animal material in use amongst the primitive inhabitants of Ireland, we now pass to that more advanced grade of civilization when metal became known to the Irish, and was used for weapons, tools, and personal ornaments. The introduction of metal was an era in our history, yet no record exists of the manner or period when such knowledge was acquired. Its adoption, however, was neither sudden nor universal, for, so late as the ninth century, stone weapons were still used in Ireland, and stone implements were fabricated with metal, probably even with iron tools. (See p. 74.)

The transition from the first rude instruments of flint stone or bone to the rare and costly articles of metal, must have been very gradual, and possibly extended over many centuries. At first, perhaps, the use of metal was limited to the kings and chiefs, and may have served as an indication of rank.

Neither sacred nor classical writers afford any clue to the discoveries of the ancients in metallurgy, beyond the fact that Tubal-Cain was "an instructor of all those that work in brass and iron;" that the Greeks preserved the tradition in the person and name of Vulcan the smith; and that, when Homer wrote, gold, silver, and also copper and tin, with their compound, brass, were well known, and brought to a high degree of perfection in the arts. But such discoveries were pre-

historic in Greece, Asia Minor, and Egypt; and it is remarkable that, while vague traditions respecting the inventors of other arts and sciences float through ancient history, there is not the slightest reference, of even a mythological nature, respecting the *discovery* of metals, to be found throughout the writings of the ancients.

When and how the Irish people discovered metals and their uses, together with the art of smelting and casting, has not been determined by archæologists. Whether the knowledge spread from any particular country, by the distribution of mankind, and the intercourse of nations throughout the earth, or that the Irish made the discovery for themselves independently, are questions of great interest, but on which we possess very imperfect means of deciding.

To attribute to a people so inquiring, energetic, and ingenious as the early Celtic inhabitants of Ireland, the discovery of some of our vast mineral resources, as well as the uses and properties of metals,—the mode of smelting, and afterwards the art of casting,—is allowable, when we possess no evidence to the contrary.

Traditional notions respecting the aboriginal inhabitants of Ireland are to be found in early Irish history, but chiefly in the *Leabhar Gabhala*, or Book of Invasions. Numerous extravagant reports are there given; but of the actual habits or arts of the primeval people of Ireland, we really know nothing, except what may be gleaned from their monuments, and those remains preserved in the Museum of our Academy, and other similar antiquarian collections.

The first wave of population most probably reached these shores from the nearest land of Britain or Scotland in the process of the general diffusion of mankind, after the British Isles had passed through those geological, vegetable, and zoological transitions which finally rendered them habitable to man. Whether that early race, starting from the cradle of mankind, and wandering along the shores of the Mediterranean,

passed round the coasts of Spain, Portugal, and Gaul, till they arrived at the nearest point from which the cliffs of Albion might be discerned; or, following the course of the great rivers, such as the Danube, Rhine, Elbe, Seine, and Oder, &c., that traversed the primeval forests of Europe, came by a more direct, though less easy path; or whether they reached these islands by a northern route, or crossed direct from Spain,—are mere conjectures.

It would, however, appear that various colonists, or conquerors, such as Partholon and Milesius, at different times pursuing the destiny of their race, sought the “Far West,” and finally rested in Erin, the extreme point of the old world in that direction; but no historian has shown that even the earliest of those adventurers found the island uninhabited.

• The two earliest of these colonists were the Firbolgs and the Tuatha de Danann, to both of which a Grecian origin has been assigned by our bardic annalists. Shortly after the arrival of the latter, the two first memorable battles recorded in Irish history were fought,—those of the northern and southern Moytura, in the counties of Sligo and Mayo, the memorials on the fields of which, to this day, attest the truth of the statements made by the historians. In these battles the superior skill and weapons of the Tuatha de Danann prevailed, and drove the Firbolgs to the southern isles of Aran, where those stupendous barbaric monuments of unhewn stone, erected without mortar, tend to prove that these people had then no knowledge of lime or of metal tools, although they, probably, had some copper or bronze weapons. At one of these engagements it is said that in the rear of the Tuatha de Danann army the smith was at work renewing and sharpening the weapons of the combatants. It is also related by the antiquary, Duald Mac Firbis, in his history of that people, that they knew how to smelt metals; but further, we may say with Tighernagh, the most faithful of the annalists,—“*Omnia monumenta Scotorum ante Kimbæth incerta erant.*” In an ancient

poem, quoted by Keating, it is said that the Tuatha de Danann brought with them to Ireland the *Lia Fail*, or Stone of Destiny (now supposed to be underneath the Coronation Chair in Westminster Abbey), the sword of Lughaidh Lamhfhada, a spear, and the cauldron called *Coire-an-Daghdha*; so that it may safely be inferred they had a knowledge of metals, and hence were styled necromancers. (See Haliday's Translation of Keating, p. 199.) There are also divers indications in the oldest annals of the application of metals to the arts, where we read of Credne, the artificer, who constructed the silver hand for Nuada Airgeat-Lamh, the hero of the battle of Moytura; of Goibhnen, the smith, over whose wife the great sepulchral monument at Drogheda was erected; of Diancecht, the Irish *Æsculapius*; and, in somewhat later times, of the Gobban Saer, the great primeval Christian builder, to whom is traditionally attributed the erection of several of our ancient stone structures.

Unlike England, where the Roman, Saxon, Norse, and Norman invaders, each in succession, ruled for centuries, and left their remains in such abundance as nearly to obliterate all vestiges of its primeval inhabitants,—Ireland has remained, notwithstanding all her vicissitudes, in possession of her ancient language, and a greater amount of the vestiges of her early people, than any other nation in north-western Europe.

Whether gold, silver, copper, tin, lead, or iron, was first discovered by mankind in general, is questionable; but it is usually conceded that iron was the latest. Presuming that the Irish made the discovery for themselves, and became educated to a certain extent in the metallurgic art, a question arises,—which was their first discovery, gold or copper? for silver, not being found here in any considerable quantity in a pure or native state, is less likely to have attracted attention.

Gold,—in Irish, *Or*,—which is usually found in the purest condition in grains or nodules, and frequently on the surface, often washed down the beds of streams, and by attrition kept

bright, would naturally, the soonest of all the metals, attract attention. In such a state there is every reason to believe it existed abundantly in Ireland in former times, and is even still found in small quantities in Wicklow. It is also quite possible that it existed in several rivers in Europe in very early times. Such is the condition in which it is at present obtained in many parts of Africa, where the inhabitants who gather it and bring it to the coast possess no knowledge of the manufacture of it or any other metal. The most uncultivated savage lighting on a glittering gold nugget would naturally add it to his string of decorations, and then, by simply hammering it between two stones, could flatten and shape it into any form he pleased. Thence by accident or his own ingenuity, he might learn how to smelt so very fusible as well as ductile and malleable a metal, and thus the second stage would have been achieved. Therefore, where gold existed, it may fairly be presumed that it was the metal with which men first became acquainted; and, once upon the high road to discovery, there was no limit (by means of the hammer and crucible) to the extent to which gold might be worked.

Did manufactured gold and stone weapons and tools coexist? Our history is silent on this point, and as yet, well authenticated notices of the discovery of any such combination have not been recorded. It is, however, remarkable that the first historic notice of any metal in Ireland refers to gold: for under A. M. 3656, we read in the Annals of Clonmacnois, and those of the Four Masters, that in the reign of Tigh-earnmas, "gold was first smelted in Ireland, in Fotharta-Airthir-Liffe," or the territory of Fotharta, a woody district in Cualann or Wicklow, to the east of the River Liffey, and that the artificer's name was Ucadan. It is also stated that by him "goblets and brooches were first covered with [made of?] gold and silver in Ireland;" but that would only prove the knowledge of gilding, either in the liquid form, or, what is more probable, by plates of gold laid over the article, such as we

observe in counterfeit rings of great antiquity, and in some antique fibulæ which have come down to the present time. A similar application of gold may be seen in some of the Scandinavian breast-pins. It is, moreover, remarkable that most of the early forms of ornamentation, consisting of lozenge-shaped, chevron, zig-zag, or straight-lined patterns, together with volutes, concentric circles, and spiral lines, found upon our earliest stone monuments, and clay urns, of undoubted heathen origin, are also the forms of decorations chiefly observed in our earliest and simplest golden ornaments and bronze celts.

Topographers have not yet determined the precise limits of the Fotharta Cualann, but it was undoubtedly near and probably to the east of the source of the Liffey. Upwards of three-and-thirty centuries elapsed without any further reference to native gold occurring, in either our ancient Annals or modern history; not even the most extravagant of the Fenian romances alluding to the existence of the metal in Ireland, although the authors decorated the heroes of these tales with oriental splendour. In the year 1796, however, in the same part of Wicklow, perhaps on the very site of the furnace of Ucadan, upwards of £10,000 worth of unwrought native gold was obtained in about two months, and small quantities have, from time to time, been gathered there ever since. The subject of gold-working shall be considered in detail, when describing the collection of ornaments of that metal. Moreover, although gold was, for the reason assigned, in all probability, the metal first known to the Irish, the wrought specimens thereof which have come down to the present time do not exhibit the same simplicity of design and workmanship as those of copper and bronze; and, being all objects of personal decoration, the weapons formed out of other metals claim a prior attention in the order of this Collection.

COPPER, *Umha*.—As yet scarcely any notice has been

taken of our Irish copper weapons, apparantly the forerunners of the mixed metal—bronze or brass. The only copper implements of very great antiquity in the Academy's collection are some celts, evidently of the very earliest pattern and greatest simplicity in construction, a couple of battle-axes, a sword-blade of the curved broad shape, usually denominated scythes, a trumpet, a few fibulæ, and some rudely formed tools. There can be little doubt that these copper celts are the very oldest metal articles in the Collection, and were probably the immediate successors of a similar class of implement of stone. They may, however, be considered along with those of bronze.

We have no notice of the discovery or first working of copper in Ireland, although it is found here in small quantities in a native state; but there are traditions of copper mines having existed from a very early period, and traces thereof have been found in the counties of Kerry and Cork, to which allusion has already been made at page 85, in describing the stone tools discovered therein. Both copper and cobalt are still found at Mucross. And among the wonders of Ireland related in the edition of the Irish Nennius, published by the Archæological Society, we read of Lough Lein, now the lake of Killarney, being surrounded by four circles, viz. :—one of copper, one of tin, one of lead, and one of iron. (See p. 220.) In the present day copper abounds in Ireland, and is chiefly obtained from the counties of Wicklow, Waterford, Cork, Kerry, Tipperary, and Galway: and in the year 1855 as much as 1157 tons of that metal, exported from Ireland, were sold at Swansea.*

Although we do not possess sufficiently large quantities

* Gray copper ore is chiefly found in Cork and Kerry, and the yellow ore, or copper pyrites, in Wicklow, Waterford, Kerry, Cork, and Tipperary; native copper is even still found in small quantity in the mines at Bonmahon, county of Waterford. The art of smelting copper, though now more complete than that of any other metal, has been only very recently brought to perfection.

of pure native copper, such as the Greenlander, Esquimaux, and certain North American tribes cut and hammer, without smelting, into arrow-heads, nails, and other tools and weapons, still the copper ore, as it here exists, is sufficiently attractive to call the attention of the inquiring eye of a half civilized man. It would, however, be mere speculation to consider now the question of breaking the ore and its matrix into small fragments,—roasting it, and then, by means of a flux, a powerful heat, and a peculiarly constructed furnace, smelting and casting it, as employed in the present day. We are quite in the dark as to the method employed by our ancestors. Upon the steppes of Tartary, and in some of the wildest parts of Russia, the remains of very ancient copper furnaces of small size, and of the most rude construction, have been discovered. It is remarkable that so few antique copper implements have been found, although a knowledge of that metal must have been the preliminary stage in the manufacture of bronze. The circumstance may be accounted for, either by supposing that but a short time elapsed between the knowledge of smelting and casting copper ore, and the introduction of tin, and subsequent manufacture and use of bronze; or from the probability of nearly all such articles having been recast and converted into bronze, subsequent to the introduction of tin, which renders them harder, sharper, and more valuable.

The softness of unalloyed copper was thus, in process of time, corrected by the admixture of tin, of which, together with minute quantities of lead, all our ancient bronze articles are composed. When this discovery was made, or this art first introduced, is unknown; but the circumstance of our proximity and early intercourse with Cornwall, the great emporium of that metal for the ancient world, as well as the fact of tin-stone being found in small quantities in Ireland, points to abundant sources from whence the hardening element of bronze could have been with facility obtained.

The Irish name for copper is *umha*, a pure Celtic word,

and that for tin is *stan*, like the Latin *stannum*. Whether we had originally sufficient native tin, or imported it from England, is uncertain, but there was a period when, according to the comparative value of the two metals, the one must have been nearly as plentiful in the Irish market as the other. Thus in a very ancient manuscript in the library of Trinity College, we read that³⁴ a pinguinn is the value of an unga of white bronze [*bán umha*, probably tin]; and half a pinguinn is the value of an unga of red bronze [*derg umha* or copper]; and the unga of bronze [*umha*] is the same weight as the unga of silver [*airgead*], and the red bronze is the same value as the tin [*stan*]; and eight grains of wheat is the weight of a pinguinn.”*

Dr. Charles Smith, in his “History of Kerry,” page 125, says he collected tin in that locality. Sir Robert Kane has returned the following answer to a question respecting Irish tin:—“Tinstone is found in small quantities in the sand and gravel of the rivers in Wicklow, to the south and west of Avoca, principally those streams coming from Croghan Moira into it, as the Aughrim and its branches. The quantity is not large, and the supply uncertain, and hence, at the present prices of tin, quite useless. It appears in that place as in most other countries curiously associated with native gold. The tin-stone, or native peroxide of tin, or stannic acid, is the usual ore of tin, worked from similar sources in Cornwall.”

The earliest notice of silver related in our Annals is that given at page 354, where it is associated with gold. A brilliant white metal much used in jewellery, and denominated *Findruine*, was known to the Irish in early times, the composition of which will be considered in the description of articles composed of that substance. There are a few trivial articles of lead in the Museum, but not of any great age.

Several chemical examinations of metal objects of anti-

* Extract supplied by Mr. Curry from MS. H, 4, 22, T. C. D.

quity have been made at different times during the past century, both in this country and in England, with the results of which the learned are acquainted; but, for the purposes of this Catalogue, the very careful analysis made by Mr. J. W. Mallet, of articles in the museum of the Academy, published in vol. xxii. of the Transactions, will suffice. The papers of the late President Dr. Robinson, as also those of Mr. Donovan, Dr. Sullivan, and Mr. Cooke, in vol. iv. of the Proceedings, may be referred to with profit by those anxious to be more particularly informed upon this subject.*

In sixteen specimens of antique bronze, consisting of celts, spear-heads, swords, daggers, chisels, rings and bells, examined by Mr. Mallet, it would appear that the amount of tin varied from 1 to as much as 13·88 per cent., and there does not appear to have been any fixed proportion maintained between it and the copper. Small quantities of lead were found in some. No. 16, on Tray A, is the celt referred to as No. 2 in Mr. Mallet's analysis, in which there was only 1·09 per cent. of tin:—"A proportion," says the author, "so small that it might be supposed to be derived from the addition of fragments of old bronze to the copper, or from imperfect reduction of the ore." Mr. Phillips obtained as much as 97·71 per cent. of copper, and 0·28 of sulphur, from an Irish spear-head; therefore, it must have been like our copper celts, almost entirely composed of that metal. Leaving the question as to how 1 or 2 per cent. of any foreign metal became mixed with the copper to chemists to decide, and taking the physical properties and ostensible colour of the metal as our guide, the copper celts have, with few exceptions, been separated and arranged on

* See also Dr. George Pearson's careful analysis of "ancient metallic arms and utensils," some of which were Irish, published in the Philosophical Transactions for 1796; Mr. Alchorn's Analysis, in 1774, printed in Lort's paper on Celts, in the *Archæologia*, vol. iii.; see also vol. xviii. of that work; likewise "The Pre-Historic Annals of Scotland," Edinburgh, Sutherland and Knox; and Mr. Phillips' learned paper in the "Quarterly Journal of the Chemical Society," for October, 1851.

Tray **A**, and thereon amount to 26. It is remarkable that almost all these copper celts appear to have been formed upon two types. There are 30 copper celts altogether.

A special description of bronze, of a peculiar golden lustre, depending, it is supposed, on the admixture of a certain proportion of lead, having been observed in a collection of articles found at Dowris, in the King's County, it has since received the name of "Dowris Bronze." The Romans, we know, imported from Cyprus a copper called *coronarium*, which was given a golden colour by means of ox-gall. Zinc was mixed with copper for making some of the brazen articles in the Collection, especially the culinary utensils of later times. See also description of No. 9, Class II., page 158.

The Metallic Collection commences with the copper and bronze specimens in the third Compartment of the Southern Gallery, occupies all the Western Gallery, and passes down from thence throughout the whole of the lower story—the bronzes ending at the northern door of the Library.

ORDER I.—COPPER, BRONZE, AND BRASS.

SPECIES I.—WEAPONS, AND WEAPON TOOLS.—BRONZE I.

COPPER and bronze Celts, axes, and palstaves, occupy the entire of the third Compartment in the Southern Gallery, and also Rail-cases **K** and **L**. They form one of the most complete collections in the Museum, and are undoubtedly the most numerous assemblage of such implements known to the learned in Europe. When the stone-weaponed people acquired a knowledge of the metallurgic art, it would appear that they still retained the same principles of design, were influenced by similar habits of thought, and adopted the same mode of warfare,—the type of the old stone celt being preserved in the form of the newly introduced and gradually adopted metal weapon. Both stone and copper, or bronze, were, in all probability, for a long time coexistent, the former slowly giving way to the latter, as the matchlock was replaced by the musket, and,

after many years, by the rifle. In no other class of implement is the process of development more truly represented than in the gradual transition of the metal celt, and palstave, from the rudest and simplest to the most perfect form.

The term *Celt*, from *celtis*, a chisel,* is quite conventional, but, having been adopted more than a century ago to designate those weapon-tools in the shape of axes, hatchets, adzes, and chisels (formerly called chip-axes), and preserved by authors since, it would be attended with much inconvenience to alter it now.† That they are the most ancient weapons, next to those of stone, may be gleaned from the fact of their being almost the only antique implements of any kind formed out of copper; from their great similarity, both in shape, use, and mode of adjustment, to the stone celts; and from there being as yet no name discovered for them, and no reference to them to be found in Irish history, as there is to swords and spears.

The entire Collection at present (July, 1860) amounts to 688, of all forms and sizes, including deposits, but not the celt-shaped tools on Tray QQ.

Upon careful examination, it has been found that thirty of the rudest, and apparently the very oldest celts, are of red, almost unalloyed copper.

The term *palstab* or *palstave*—applied to the long, narrow-winged celt—is of modern introduction, and still of very limited acceptance; it is of Scandinavian origin, and said to have designated the weapons employed by some northern tribes for battering the shields of their enemies. (See Worsaae's "Primeval Antiquities.") Iron implements, like our *loys*, and called

* See the Rev. Dr. Todd's notice of the word "*Celt*," in his translation of Baron Bonstettin's paper, in the "Proceedings," vol. vii. p. 42.

† See Plot's History of Staffordshire; Neville's Paper in the Philosophical Transactions for 1732; Borlace's History of Cornwall; and Lort's Paper on Celts, A. D. 1779, published in the fifth volume of the Archaeologia. Vallancey, and some Irish writers of his school, called these Celts *Tuagh Snaighte*, but on what authority they do not say. See *Collectanea*, vol. iv., p. 55.

paalstabs, are still used in Iceland, either for digging the ground or breaking the ice. When, however, we stand—as in the Gallery of this Museum—before a collection of some hundreds of these implements, considered either as simple articles of war, or, like their predecessors in stone, as weapon-tools, and pass each series in review, we perceive that these so-called *paalstabs* are but a necessary and gradual link from the simple flat axe-blade, passed through a wooden handle, to the highly finished socketed celt, richly ornamented, and supplied with a loop for securing it to the shaft, which was inserted into it.

The simplest form of celt is a cuneiform or wedge-shaped piece of metal, evidently formed on the type of the large stone celt; longer than it is broad; curved on its sharp-cutting, hatchet face, and square or rounded at the opposite, narrow, and blunted extremity. In length, this weapon varies from upwards of 12 inches, as in No. 27, Tray **B**, shown by Fig. 247, on page 364, which is the largest yet discovered in Ireland, to No. 524 on Tray **R**, a small socketed celt, figured at page 386, which is scarcely one inch long.

For the sake of arrangement, the celts in the Academy's Collection, although presenting more than a dozen varieties of form, may all be classed under three different heads: first, the plain hatchet-shaped piece of metal which passed into and probably through its wooden handle—this may be denominated the *Simple flat celt*; secondly, the *Winged celt*, or *Palstave*, which mutually received and was received into the handle; and thirdly, the *Socketed celt*, into which the handle was inserted, as shall be explained hereafter. These three varieties pass insensibly into each other. The following illustrations represent typical forms of the simple flat celt, of which there are now in the Collection about 60 well-marked specimens, chiefly arranged on Trays **A**, **B**, and **C**, on the top shelf of the third Compartment of the Southern Gallery, and in Rail-case **K**.

COPPER CELTS.—Figures 245 and 246, drawn from Nos. 1* and 10, on Tray **A**, present us with the two principal va-

rieties of the pure copper celt, and both of them bear a great similarity to their stone predecessors of the rudest description, like those found in the Shannon, and described at pages 49 and 69. No. 1, cleaned and drawn one-half the size of the



Fig. 245. No. 1.

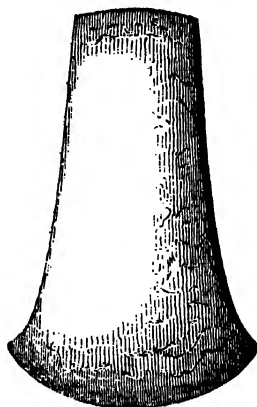


Fig. 246. No. 10.

original, is only $\frac{1}{16}$ ths of an inch across the thickest portion, and fines off to the edge all round. It was—*Presented by Lord Farnham*. No. 10, Fig. 246, which is in good preservation, is 6 inches long, $3\frac{3}{4}$ wide across the broad and remarkably sharp-cutting edge, and $1\frac{7}{8}$ at the smaller end, which is about the sixteenth of an inch thick, while in the central portion it is upwards of a quarter of an inch in thickness. One side is a little fuller than the other, but in all other respects it is marvellously symmetrical, a circumstance observable, with few exceptions, throughout the entire Collection of metal celts. Like all the other copper celts, it is totally unornamented, but it has been cleaned for the purpose of showing the colour of the material, having had, when it came into the Collection, the usual brown crust or oxidation peculiar to these copper specimens, and, for the most part, distinguishing them from the greenish verdigris hue on many of the bronzes. It was found in the county of Waterford, and presented by the Mayor of Waterford in 1853.

Proportionate to its size, the copper celt is usually thicker and rougher on the surface than that made of bronze, and nearly all the former have one side smoother than the other, as if they had been cast in single-stone moulds. A few of these copper celts are lunette-edged, as Nos. 15 and 19, but others are only simple wedges of cast metal. The cleansed specimens show that considerable variety of colour exists among them. For the details of these copper celts, see the descriptions of Tray **A**, at page 396.

BRONZE CELTS, of the first variety, are well represented by the accompanying illustration, Fig. 247, from No. 27, on

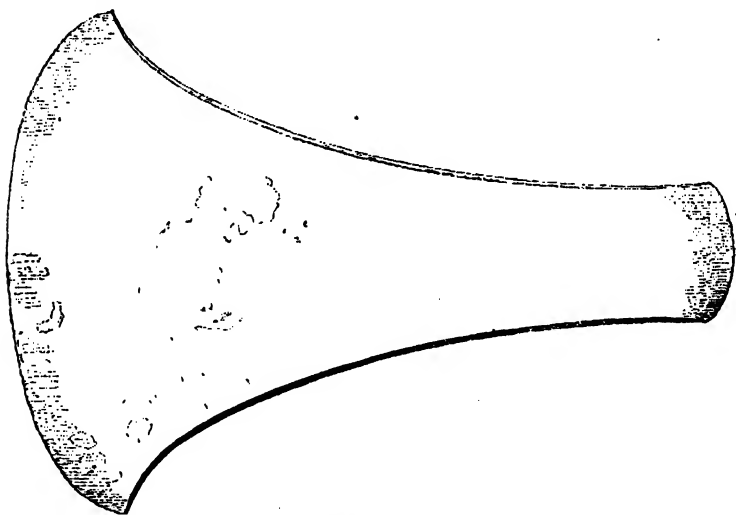


Fig. 247. No. 27.

Tray **B**, the largest specimen which has yet been recorded. It is $12\frac{1}{4}$ inches long, $8\frac{1}{2}$ broad in the widest part, three-eighths of an inch thick, and weighs 4 lbs. 14 oz.; it is a good type of a number of axe-shaped celts arranged beneath it on Tray **B**. It was found in the ruins of Kilcrea Castle, county of Cork, and—*Presented by Sir Matthew Barrington, Bart.*

The long, narrow celt, made by prolonging the hinder part which passed into the wood, is well shown by the accom-

panying illustration, drawn one-half the natural size, from No. 72, on Tray D, a beautiful cleaned specimen, composed

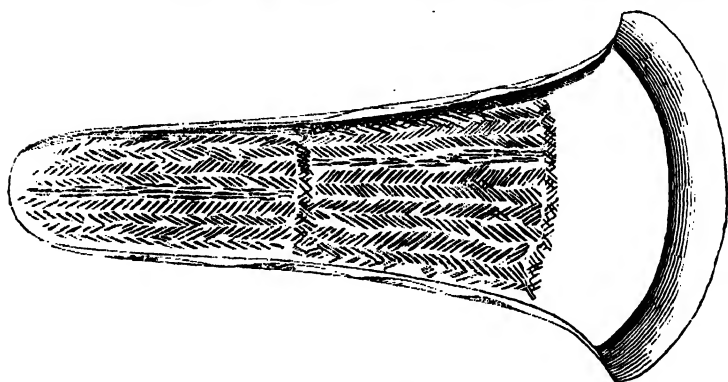


Fig. 248. No. 72.

of gold-coloured bronze, and ornamented both on its sides and edges; $7\frac{1}{2}$ inches long and $3\frac{3}{4}$ thick. Of the same variety of the long, narrow celt, are the three specimens shown below, two of which likewise present us with types of orna-

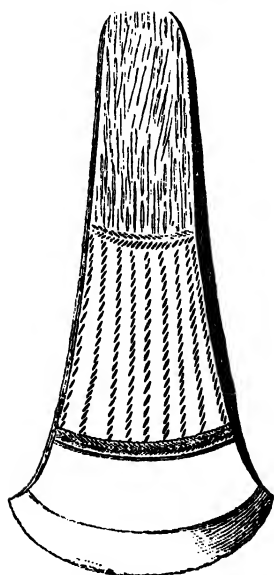


Fig. 249. No. 608.

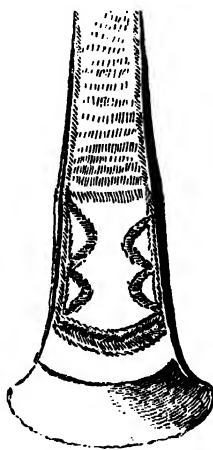


Fig. 250. No. 135.

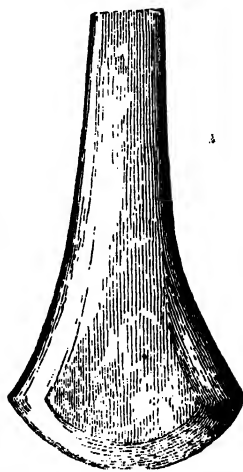


Fig. 251. No. 145.

mentation, to be referred to hereafter in the general description of the decoration of celts. Fig. 249, from No. 608, in Rail-

case K, represents a very perfect specimen, of a light green colour, $8\frac{1}{2}$ inches long, 4 wide at the blade end, half an inch thick, and decorated on both sides and edges. The patina on its surface has preserved all the sharpness of the ornamentation. Fig. 250, from a specimen of the same class, No. 135, on Tray G, is 7 inches long, 3 wide, and highly decorated; it was found at Glencullen, county of Dublin. But No. 145, Fig. 251, on Tray G, although it may be classed among the long, narrow celts, is very peculiar, and, until a portion of it was cleaned, presented all the external appearance of copper. The alloy of tin is, perhaps, very slight, and it would appear to belong to a rude and early type; like several of the copper celts, it fines down to a rounded edge along the entire margin. It is 7 inches long, and $3\frac{1}{2}$ broad in the widest portion. We possess two others, No. 43 on Tray C, and No. 144 on Tray G, of precisely the same form. The number of long, narrow celts in the Collection is 132: of these, 126, from No. 57 to No. 173, are displayed on Trays D to H, and 8 are placed in Rail-case K.

As this classification is founded on the mode of fixing these implements in their handles, it is necessary to digress, and explain that process, before we examine the two other varieties,—the winged and the socketed celts.

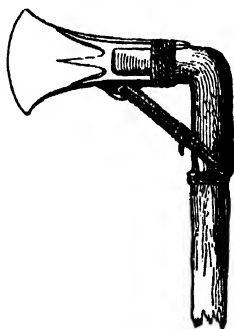
Left without historic reference, and with but few pictorial illustrations, we are thrown back upon conjecture as to the mode of hafting and using the metal celt. As already stated, this weapon-tool is but the stone implement reproduced in another form; and, having once obtained a better material, the people who acquired this knowledge repeated the form they were best acquainted with; but economized the metal, and lessened the bulk, by flattening the sides. In proof of this repetition in metal of the ancient form of the stone celt, may be adduced the fact of a copper celt of the precise outline, both in shape and thickness, of one of our ordinary stone im-

plements having been found in an Etruscan tomb, and now preserved in the Museum of Berlin. (See Etruscan Collection there, No. 3244.) It is 6 inches long, and $2\frac{1}{2}$ wide in the thickest portion. (See Fig. 310, p. 395.)

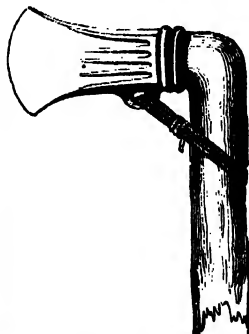
The three following illustrations, A, B, and C, serve as types of the different forms of celts, and the mode in which they were hafted. A, Fig. 252, represents a simple, flat, wedge-shaped celt, passed through a wooden handle, and secured by a ligature, possibly of hide or gut. This implement is evidently the type of our modern axe. By use, however, as a



A. Fig. 252.



B.* Fig. 253.



C.* Fig. 254.

tool or weapon, it must, in process of time, have either split the handle or passed through it. To remedy this defect, a stop or slight ridge was raised upon the flat surface of the metal, generally at the junction of the posterior and middle thirds, as in Nos. 64, 72, 134, 137, &c. Still, this must have been a very imperfect barrier to the passage of the implement through the handle, and, therefore, a new plan was adopted, that of making the metal and wood pass one into the other, and thus arose what is termed the winged celt, or palstave, of which there are 211 specimens in our Collection, from No. 174, on

* Figures B and C, drawn by Mr. Du Noyer, after the pattern of those published by him in the *Archæological Journal*, vol. iv. pp. 5 and 6, have the curved portions of their handles rather too angular for the ordinary natural growth of the wood.

Tray I, to No. 356, on Tray N, and from No. 632 to No. 659, in Rail-cases K and L. Here a curved piece of wood, like a hurl or an ordinary crooked walking-stick,* was split or cut, so as to receive the metal weapon, which had a slight wing or flange raised upon the upper and lower edges of the narrow portion, to prevent its joggling or slipping up and down; and the parts, thus adjusted, must have been bound round after the fashion shown by B, Fig. 253. That the winged celt had, however, originally no stop, is shown by Fig. 258, on page 373. Still, a hard blow with this implement was apt to split the wooden handle, and so man's ingenuity devised a larger stop or elevated ridge near the middle, at the junction between the axe-blade, or cutting portion, and the parts which passed into and received the sides of the handle, against which they abutted. Nevertheless, the implement was imperfect, and still liable to split; and so, in process of time, the third great step in celt manufacture was achieved,—that of making the metal the sole recipient of the wooden handle, by developing the wings, enlarging and bringing up the stop, and gradually removing the septum that divided the blades of the handle, until the implement became what is called a socketed celt, of which an example is given in the illustration, C, Fig. 254.

This was a great step in advance; yet the implement was imperfect, because, as every person acquainted with the working of such like tools is aware, it was apt to kick, the blade or cutting edge turning upwards at each repeated blow, until it finally flew off the handle, as any badly fitted hammer, hatchet, or adze would do. To obviate this defect, a loop was added to the lower edge, on both winged and socketed varieties, and to this was attached a stay either of metal or cordage, which occupied the angle between the celt and its handle where it

* See also Mr. J. M. Kemble's Address, in the Proceedings, R. I. A., vol. vi. p. 472.*

was fastened ; but by what means, whether by a ring, staple, or tying, we at present know not. However, this additional security against the flying off of the metal head was not the discovery alone of the age when the socketed celt was invented, for it is very common amongst the palstaves. It is remarkable that we find no rivet holes in any of these hollow celts ; but in some rare specimens, in other countries, a notch, and sometimes a hole at the end of the septum of the palstave has been observed, to prevent its passing back too far, and splitting the handle, whether curved or straight. It is not certain that the palstave was always attached to a curved handle, although, from the existence of the loop or ring underneath, most of the Irish ones would appear to have been so ; some were probably attached to straight handles, like chisels, or the modern small instrument usually employed for cleaning the plough ; and, in the Scandinavian collections may be seen several long slender paalstabs, some with fragments of wood remaining, which proves the truth of this conjecture.* Such implements, many of which are highly decorated, may have been employed as spears in combat ; at the same time it is not improbable that some of our large, rude, winged celts, or palstaves, may have been employed for agricultural purposes, in turning up the surface of the soil, like the mattock or hoe still in use amongst the Egyptians and other half civilized people. Our own iron *loy*, or narrow, one-sided spade, is but a development of the ancient celt.

In this inquiry as to the mode of fixing the celt in its handle, we are not left altogether to conjecture, or forced to draw upon our imagination, for, as instances of handles of wood, bone, and horn, used with stone celts, have come to light within the last few years (see Figs. 53, 160, and 161, pages 46 and 251), so have some examples of the handles of metal celts turned up, as the following notices and illustrations

* See Worsaae's "*Nordiske Oldsager*," 1859, Pl. 37, Nos. 181, 182, and 183, drawn one-half the natural size.

attest. Figure 255 is reduced from the representation of a handled celt, 4 ft. 9 in. long, carved on one of the roofing stones

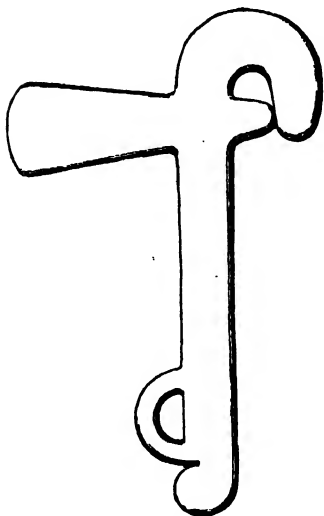


Fig. 255.



Fig. 256.



Fig. 257.

of a very ancient sepulchral monument at Lok-maria-ker, near Vannes in Brittany, for which the author is indebted to M. de Keranflech. This carving may, however, represent a stone celt, but the principle is the same.

Here the ancient Breton endeavoured to prevent the head splitting or passing through the wood by inserting the celt across the convex part of a curved stick, so that its small end rested against the concave portion of the crook. The guard, which was, probably, a flexible piece of wood fixed on the handle, evidently points to the warlike use of this implement. In the same locality was discovered another similarly sculptured stone, but without a guard. Figure 256 represents the model of a small celt attached to its handle, brought from "Little Fish River," in Africa, and exhibited to the Academy by the late Dr. Ball, in 1844. (See Proceedings, vol. ii. p. 511.) Figure 257 possesses great interest, as it is native, and is the only instance of the original handle of an ancient metallic celt

which has yet come to light. It is $13\frac{1}{2}$ inches long, and was found in the bed of the River Boyne, near Edenderry. The head metal is provided with a loop, which is worn through at one point. This curious relic is the property of Mr. Murray, of Edenderry, who has for the present deposited it in our Museum.*

Besides the foregoing, we have pictorial evidence of the celt and its curved handle in the figures carved in relief on the crosses at Monasterboice, where, from the style of drawing, they resemble the war clubs of the New Zealanders. (See Fig. 194, on page 304.†) Among the many uses to which the sharp-edged metallic celt could be applied was like that of the carpenter's mortice-chisel, as shown by the number of specimens hammered at the small end.

Some northern archaeologists hold that metal implements were introduced by a new and totally different race from those that worked only in stone. This may be true in Scandinavia, where there are no copper articles, and all the bronzes are well formed, highly finished, and many of them elaborately decorated; but it certainly is not applicable to the metallurgic art in Ireland, where the earliest implements of both these metals are of the rudest forms, and evidently copies of the stone articles of the same class; and the transition is so gradual that we can easily trace the process of development, of which no better example can be afforded than that of our grand collection of celts. Moreover, the composition of the alloy is said to be fixed and regular in Scandinavia, the metal being nine-tenths copper, and one-tenth tin, whereas in all those articles which have been analyzed in Ireland, the proportion varies exceed-

* See Rail-case L. The Academy is much indebted to Mr. Murray for the liberality with which he has allowed this and other articles from his collection to be drawn, for the purpose of illustrating our great national Museum. (See also p. 252.)

† Mr. G. V. Du Noyer has published two most ingenious papers in the *Archæological Journal*, vol. iv., upon the adaptation of the handles to both stone and metal celts, to which the reader is referred.

ingly, either because the early metallurgists had not hit off the right proportions, or had used different quantities to produce different effects in hardness, sharpness, colour, &c. Furthermore, as we pass northward, from Denmark to Norway and the top of Sweden, the amount of bronze gradually lessens, and in the former country is replaced by iron. Neither copper, tin, nor gold are found in Denmark, and no moulds of any kind for casting have been discovered there, although the spuds or *stöbeknold* are common. It would appear that the stone period was longer, and the metal one shorter and later in all these countries than in the British Isles, and Ireland in particular. In the Copenhagen Museum may be seen celts and paalstabs of iron, and of comparatively modern date; and in the central parts of Sweden the short iron hoe or pick, used by the peasantry in grubbing up roots of trees, is not much larger than, and greatly resembles some varieties of the ancient bronze celt.

With respect to the Phœnician origin of our warlike and decorative metal articles, assumed by some writers, until some proof either from authority, by argument, or by analogy, is produced in support of it, we need not discuss the question here.

The Winged Celt, or palstave, presents the greatest variety of all, as may be seen from the cuts on the adjoining page. Fig. 258 is from a simple, narrow, chisel-edged celt, No. 175, on Tray I, in which the side edges project into flanges, so as to form grooves for the reception of the cleft handle. It is $4\frac{1}{4}$ inches long, is perfectly plain, and not provided with a stop; the breadth of the wing is seven-eighths of an inch. Fig. 259, drawn from No. 234, on Tray J, $5\frac{1}{8}$ inches in length, shows both wings and stop very perfectly, the former being elliptical, and the latter rising nearly to the level of the wing. The cutting edge looks as if it had been frequently ground, and on the flat surface there is a raised cast ornament. It was *Presented by the executors of Leslie Ogilby, Esq.* Fig. 260, from No. 248, on Tray K, is the broadest specimen in the Col-

lection, and measures, across the centre of the straight-edged, lozenge-shaped wing, $1\frac{3}{4}$ of an inch. The stops are but slightly developed, and must have been bedded into the sides of the



Fig. 258. No. 175.



Fig. 259. No. 231.

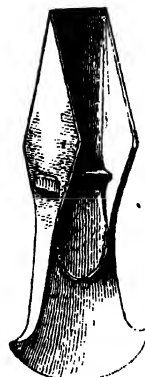


Fig. 260. No. 218.

handle, which appear to have passed below them; and, where the wings merge into the edges of the blade, a deep, well-defined groove spreads down on its surface. Upon the external face of each wing is an oblique elevated ridge, intended, probably, to keep the tying in its place.

Among this very extensive class of celts we find many remarkable varieties, two of which are well represented by the subjoined illustrations. Fig. 261, from No. 167, on Tray H, $4\frac{7}{8}$ inches long by $2\frac{3}{4}$ across the broad semilunar blade, is

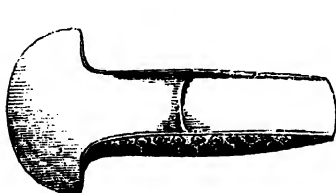


Fig. 261. No. 167.

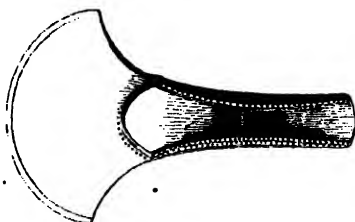


Fig. 262. No. 632.

typical of one of these subdivisions. The rounded side edges, which are beautifully ornamented in the casting with a raised hexagon pattern, project somewhat above the level of

the flat surface of the implement; and the curved stops (which, with the wings, are but rudimentary) have, like all such parts, their concavities facing the handle. There are about fifty specimens of this kind of celt in the Museum, and which are for the most part attached to Trays **G** and **H**. One of the most graceful in form, and the most perfect celt of its kind in this or any other Collection, is that represented by Fig. 262, from No. 632, in Rail-case **K**: it is $6\frac{3}{4}$ inches long, by $4\frac{1}{4}$ wide in the blade, and has been cleaned* to exhibit the beautiful golden colour of the bronze, and the fineness of its decorations. The shank portion is very narrow; the wing or flange is well developed, but the oblique stop is only rudimentary, and not likely to serve the usual purpose of that addition to the winged celt. The blade is semicircular on the cutting edge, which is beautifully sharp, and does not appear to have ever been ground or hammered; the decoration consists of minute dots, apparently formed in the mould; and nothing can exceed the fineness of the casting. It was found in the county Westmeath, and presented by Dr. Dillon Kelly, of Mullingar. This is the special form of Irish celt that was, in all probability, attached to a straight handle. It may originally have been a badge of office. There are several specimens of the same type on Tray **I** (see in particular Nos. 181, 187, 198, and 203 to 215), but they are not so large, or in such perfect preservation.

* The cleansing process employed in this and other bright bronze articles in the Museum is by carefully dipping them in a weak acid, in the same manner as a modern brass casting is cleaned after it comes from the mould. When the article has been much encrusted, it is necessary to hold it over the fire for a few minutes. The Academy is much indebted to Mr. Mooney, the brass-founder, of Ormond-quay, for much civility in this matter. Some antiquaries may think it a desecration to clean an antique metal article, as well as to remove a small fragment, for the purpose of analysis. Without, however, resorting, in some instances, to such processes, we should remain ignorant on two most interesting subjects,—the composition of the metal, and the peculiar colour and general appearance of the weapon or ornament when it came from the hands of the maker. Moreover, it is probable that all these articles were originally varnished or lacquered, like modern brasses, and that for many years such varnish preserved the golden lustre of the bronze.

Following out the theory of development in these articles, it is necessary at this stage of the inquiry to examine into the six following points separately:—The cutting edge, the stop, the wing, the side or profile view, the loop, and the socket.

The *Cutting Edge* presents great diversity, from a very slightly curved line to that of the segment of a circle, the centre of which would be about the junction of the lower and middle thirds of the length of the instrument. In the simple axe-shaped celts, and also in the socketed variety, it is seldom much curved, and in some of the latter is almost straight, or resembles that of the furmer used in turning. But in the palstave or flanged celt, we find three well-marked varieties: the saddler's knife-shape, in which the blade spreads out, sometimes to three times the width of the shaft, from which it occasionally springs at an angle (see Fig. 261, on p. 373); the lunette or semilunar form, as in Figs. 259 and 260 on that page, the former of which shows the recurved peculiarity, in which the extremities form hooked terminations, and many illustrative examples of which may be seen on Trays **G**, **I**, and **J**; and the fan-shaped, as in Fig. 262, and many specimens on Tray **I**. As in every other peculiar feature of the celt, these diversified forms of the cutting edge shade one into the other imperceptibly. Hammering would increase the hardness of this description of metal, but we do not observe any marks of such upon the cutting edges of those celts which are in a good state of preservation. They all appear to have come, like the swords, perfectly sharp from the mould. Some few, however, bear the marks of grinding and sharpening, perhaps with a whetstone, like those to be seen on Tray **MM**, in the Stone Collection, with holes at the extremities for attaching them to the person, but particularly by means of those shuttle-shaped stones, so numerous in Scandinavian collections, and which are now generally believed to have been used as rub-stones.* Some of the celts are notched, worn, or broken on

* See Nos. 58 and 59 in Scandinavian Collection, p. 133. Since that portion of

the cutting edge, but they are usually such as had remained some time in the hands of the finders, or of dealers. See remarks on No. 149, Tray **H**, p. 406.

The *Stop* commences in a rudimentary form even on plain, narrow, triangular celts, and where it could not have been of much use, as on No. 35, and as shown in No. 72, Fig. 248; but it is not seen on any of the copper specimens. It seems to have proceeded *pari passu* with the development of the wing, and is particularly manifest in the specimens on Trays **F**, **G**, and **H**. It also seems to have been coeval with the ornamentation, which in most instances it separated from the upper portion of the weapon; there are, however, exceptions to this in Nos. 72 and 136, &c. Even when the wing was fully developed, the stop still remained rudimentary, as in Nos. 187, 198, and 204, on Tray **I**; but on Tray **J** we perceive the direct object of this improvement, particularly in Nos. 212, 225, and 230. It was not of necessity associated in all instances with the wing, as Nos. 179, 196, 197, also 175, Fig. 257, page 373, have well-formed wings and no stops. At first it was a slightly raised bar, almost straight, and placed much nearer the point or small end than the hatchet face of the instrument, as in Nos. 124 and 125, on Tray **G**; it then became curved, as in Nos. 132 and 133, the concavity being always towards the handle; and in some cases it is nearer the cutting edge than the small end, as in Nos. 181, 202, and 233, on Trays **I** and **J**; also in many specimens on Tray **M**, as Nos. 300, 309, &c.; but these are rather the exceptions. As the flange or wing became fully developed, the stop was generally attached to it at the junction between its anterior and middle third. In a long series of specimens it does not rise

the Catalogue descriptive of the Stone Articles was printed, I have seen some of these shuttle-shaped stones in Scandinavian collections, encircled round the narrow edge with a band of metal, having a ring at one extremity; they were evidently used for the purpose described in the text; such an article, probably, hung at the side of every soldier, for sharpening his sword or battle-axe.

as high as the level of the flange (see all the specimens on Tray **I**), but subsequently it rises to its full height, and in some instances a little above it (see particularly Nos. 225 and 254 on Trays **J** and **K**, together with several specimens on Tray **M**). Finally, the stop assumed the character of a pocket or small side socket, into which the wood passed, the first examples of which are Nos. 249 and 252, on Tray **K**. On Tray **L** there are many specimens showing this peculiarity, as Nos. 274, 275, 276, and 284, and also some on Trays **M** and **N**, to those on the latter of which the loop had been added (see Nos. 344, 347, 349, and 351); so that, by bringing up the stop a little more between the wings, in order to close the open of the latter, and at the same time removing the septum, the socketed or recipient celt was at once formed. Of this we have a very good example in No. 276, on Tray **L**, here figured one-third the natural size. The wings and stop form a pouch, with a semicircular

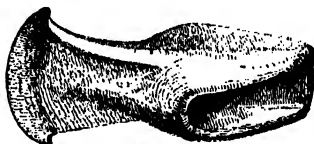


Fig. 263. No. 276.

margin on each side, into which the blades of the handle fitted. Either the stop itself or the part immediately in front of it towards the blade, became ornamented in a very rudimentary state, as in Nos. 186 and 189, on Tray **I**, Nos. 212 and 230 on Tray **J**, Nos. 235 and 250 on Tray **K**, and No. 317 on Tray **M**. As the stop rose into the socket, the projection caused thereby produced a form of ornament, as may be seen in Nos. 275, 276, and 284, on Tray **L**, and No. 314 on Tray **M**. Even after the loop was added to the long-winged celt, the stop was occasionally omitted, as in No. 341 on Tray **N**. In some instances the stop is oblique, as in No. 60 on Tray **D**, and No. 632 in Rail-case **K**.

The Flange or Wing.—By raising the side edge of the simple celt over the level of the flat surface, either in casting or by hammering it into an ornament, we perceive some rudi-

ment of what afterwards formed the flange or wing, as in Nos. 29, 32, and 34, on Tray **C**, and Nos. 57, 69, and 72, on Tray **D**, but it does not take a decided shape until we come to examine the specimens on Tray **G**, when the celt itself had altered its outline from the simple, triangular, hatchet form, to the long, narrow sub-variety, with the semilunar, lunette, fan-shaped, or saddler's knife blade:—see for example, Nos. 123, 125, 128, and 133, on Tray **G**, where we find it connected with the rudimental stop, and an advanced style of ornamentation. In most cases it occupies the greater length of the shaft, and, although found among the lunette-edged celts, it more truly belongs to the long palstave variety, as shown on all the specimens between Nos. 206 and 356 on Trays **J** to **N**. In the accompanying cut, Fig. 264, drawn one third the natural size, from No. 128, on Tray **G**, the shortest celt of its kind in the Collection, the flanges, or rudimental wings, slightly overlap the central grooved portion above, and run down into the broad, lunette, cutting edge below. It has no stop. See also No. 197, Tray **J**.

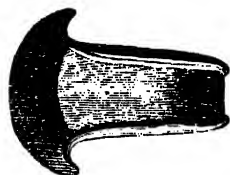


Fig. 264. No. 128.

When fully developed, the wing presents a lozenge shape on its lateral aspect, and is sometimes an inch and a half broad, as in several specimens on Tray **K**; in No. 248, of which it is $1\frac{3}{4}$ inches across, see Fig. 260, p. 373. Its edge is generally thin, so as slightly to overlap or sink into the handle, and in most instances it passes a short way below the stop, except in some of the rude specimens on Tray **J**, viz., No. 220. The most elevated portion of the wing is generally immediately below the stop, but sometimes is united with it so as to form a shallow socket. Towards the small extremity the wing fined off into a point; but in front it frequently passed down the side of the blade and was lost in the edge of that portion; or by turning inwards it as-

sisted with the stop to form the lower ornament. In most of the saddler's knife shaped specimens a semilunar ridge united the ends of the wing (see Nos. 179, 180, and 182, on Tray **I**).

In Nos. 241, Tray **K**; 303, 314, 316, 329, Tray **M**; 341, 342, 343, and 350, Tray **N**, the lower extremities of the thin high wings were turned in and hammered over the low narrow stop, to assist in completing the rudimentary side socket, as shown in the annexed illustration, drawn one-fourth the natural size, from a short chisel-shaped palstave, No. 342 on Tray **N**. In others of the same variety this peculiarity was evidently produced, in whole or in part, by the mould, as may be seen in Nos. 315 and 316 on Tray **M**. In this particular these specimens resemble the Etruscan celts.



Fig. 265. No. 342.

The *Side Edge*, or narrow profile view of the celt, presents great diversity, chiefly dependent on the full-faced shape and general character of the individual specimen. Several of these figured in the preceding part of this section afford examples of the side outline, see especially all those represented on page 373. The following cuts, together with those already

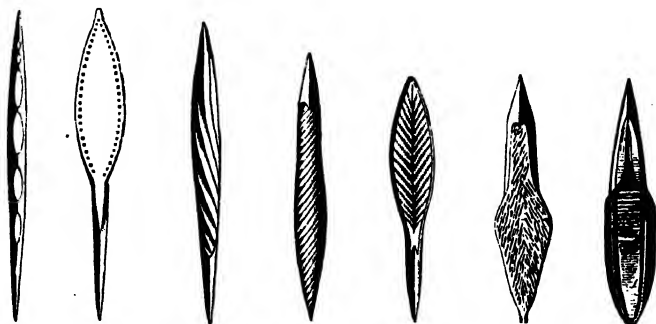


Fig. 266.

Fig. 267.

Fig. 268.

Fig. 269.

Fig. 270.

Fig. 271.

Fig. 272.

referred to, comprise nearly all the examples of side outline, and serve at the same time to illustrate the form of ornamentation common to that space. The profiles of plain copper,

or flat axe-shaped celts, such as those shown at pages 363 and 364, arc, for the most part, simple ellipses, and do not require illustration. Of the same description are the long narrow celts; but many of them present a hammered ornament, of which Figures 248 and 249, on page 365, are good illustrations. The side view of the former is represented above by Fig. 266, and in its style of ornamentation resembles the carving on the edge of the long horizontal stone jutting out from the mound some feet above the present entrance to the great Pagan tumulus at New Grange. This side ornament would appear to have been produced by hammering, although the spaces between the lines are wonderfully symmetrical. Figure 267 is a side-view of the beautiful fan-shaped celt, No. 632, represented at page 373. Figs. 268 and 269, drawn from Nos. 621 and 132, afford profile views of two kinds of roping or twisted ornament on the sides of short, thick, slightly flanged, and lunette-edged celts, in which the broadest portion is about the site of the stop. Fig. 270 is the profile view of the beautiful, cleaned, fan-shaped celt, No. 633, in Rail-case **K** (see page 433), having a foliate cast ornament on the outside of the broad wing. Fig. 271, the side aspect of No. 209, on Tray **J**, shows a very peculiar form of cast leaf ornament on the outer surface of a broad-winged palstave enumerated at page 410. Fig. 272 exhibits a rude form of ornament, with raised hammered bars, as if for fixing the tying that passed round the wings and sides of the handle at this part of No. 225. See page 411.

The Loop.—For the reasons already stated, and to secure the celt to the handle more effectively, a loop or eye was added in the casting to the inferior edge of both the winged and socketed celt, as shown in 19 specimens of the former, and all but 3 of the latter in this Collection, the object being evidently to provide against the flying off of the head, by securing it to the shaft by a stay between points where the greatest stress

would come when a heavy blow was given with the instrument, as explained at page 368. There is little variety observable in this addition to the perfecting of the celt, except where, in some instances, it became mixed with the ornamentation in its vicinity. What the brace was made of, or how fastened below to the handle, has not yet come to light, the only instance in which that part of the instrument was discovered being where a large bronze ring passed through the loop, in a celt found in Yorkshire, and now in the British Museum, and engraved in the *Archæologia*, vol. xvi., and also in the *Archæological Journal*, vol. iv. That metal straps or rings played in the celt loops, in some of our Irish specimens, is manifest from the worn appearance of that shown in the looped specimen, Fig. 257, at page 370. But the great majority of the loops bear no marks of wearing on their internal faces; on the contrary, in a good many, the cast marks are as fresh as the day they came from the mould, thus evidently showing that the brace or stay had never been applied, or was, probably, formed of some flexible material, such as hide, gut, or vegetable fibre.

In the palstave celt the loop is usually placed beneath the stop, and in the socketed ones is always close to the top. Figure 273, drawn one-third the natural size, from No. 353, on Tray N, represents the usual position of the loop, in a long narrow specimen of the palstave variety, with a shallow groove, and a triple-cast ornament on each side below the point where the wings and stop coalesce to form the slight lateral socket. The lunette cutting edge, with much recurved points, has the appearance of having been ground.



Fig. 273. No. 353.

Fig. 274 is drawn from a very rare specimen of double-looped palstave, in the Collection of Lord Talbot de Malahide,

by whose permission this illustration is afforded. This curious celt is $6\frac{1}{2}$ inches long, has a chisel edge, and a shallow groove between the wings, which turn in below to form the curved stop. The loops are not quite symmetrical. It was,



Fig. 274.

probably, attached to a straight handle, to which it was bound both by circular and longitudinal ligatures.*

Without an actual examination of the various specimens alluded to, the force of the foregoing description cannot well be understood.

The Socketed Celt.—In the previous description and illustrations may be traced the successive and uninterrupted development of the third and final variety of celt, from the simple, flat, wedge-shaped piece of metal, to the hollow implement, formed to receive the end of the straight or crooked handle. As the stop became developed in the palstave variety, the enlarged wings merged into it, so as to form a socket on each side, as shown in Fig. 263, page 377. From this there was but one step more, that of bringing up the stop between the sides of the wings, and removing the thin and gradually decreased septum, when the true socketed celt was achieved.

Why our ancient celt-makers never conceived the idea of casting a wedge or axe-shaped piece of metal, with a hole in it, passing a handle through, and thus effecting the most common and useful instrument subsequently made of iron,—the hatchet, hammer, or battle-axe,—is remarkable. But although such articles have been discovered in Holstein, Saxony, and Denmark,—some of which are of great beauty, and highly decorated even with gold,—no implement of this description has yet, we believe, been found in the British Isles, certainly not in Ireland.

The simplest form of the socketed celt is that shown on

* See *Archæological Journal*, vol. ix. p. 194.

page 384, by Fig. 275, No. 510, on Tray **R**, perfectly plain and unornamented, without a loop, $2\frac{1}{16}$ inches long, $1\frac{1}{8}$ wide across the broad cutting edge, and $\frac{5}{8}$ ths in the clear of the oval socket. This is the scarcest form, there being but three specimens thereof in the Collection. The great majority of socketed celts have loops placed more or less near the socket margin, but always situated above the middle of the instrument. The socket itself is either circular, oval, or quadrilateral, and generally occupies about four-fifths of the length of the celt, ending in an acute angle, and in the majority of specimens having one, two, or three ridges, marking the joinings of the core-pieces used in casting. The particulars of many of these peculiarities are specified in the details of Trays **O** to **S**, at pages 418 to 429. * When present, these raised cast marks served to retain the wooden handle when driven firmly into the socket;—see particulars of No. 408, at page 421, in which specimen a portion of the original handle still remains. In external shape the socket presents several varieties,—such as the circular, compressed or flattened, quadrangular, hexagon, and octagon, examples of all which are given in the accompanying illustrations. The cutting edge in the socket celt is generally semilunar, although in some instances nearly straight or chisel-shaped. A few specimens, Nos. 428, 436, and 446, on Tray **Q**, are axe-shaped, like those small iron hatchets of a later period, preserved in the Iron Collection. There are a few long, narrow, square, chisel-edged, socketed celts, on Tray **S** (see Nos. 549, 558, 568, and 569), which at first view would appear better adapted for tools than weapons; yet their graceful outlines, and, in some instances, elaborate ornamentation, would lead us to infer that they were all weapons.

In size the socketed celt varies, from No. 568, which is $5\frac{1}{8}$ inches long, to No. 524, the smallest celt of any description in the Collection, and possibly the least ever found in the British Isles, and represented by Fig. 285, at page 386.

The lip of the socket is generally ornamented, and very frequently surrounded by one or more raised bands or fillets; sometimes by a very well-cast roped ornament, evidently made to represent a cord of twisted gut. A special description of cast ornament, consisting of longitudinal raised bars, generally ending in annular or button-like projections, sometimes occupies the sides of this implement. In one rare instance, Fig. 280, on the next page, the ornamentation is more elaborate, but in no case is it produced either by the hammer, punch, or graver, as in the flat, simple celt. A similar description of ornament is found on long square socketed Breton celts. See *Archæologia Cambrensis* for June, 1860.

The following illustrations present types of the most remarkable varieties which the socketed celt assumes, in a collec-



Fig. 275. No. 510.

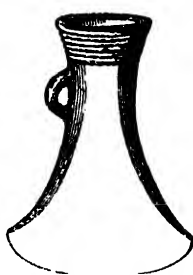


Fig. 276. No. 444.



Fig. 277. No. 466.

tion amounting to 201 specimens, including those in Rail-case L. Figure 275, one-half the natural size, has been already described at page 383. Figure 276, one-third the natural size, represents No. 444, on Tray Q, a specimen of narrow looped and socketed celt, 4 inches long, with a broad hatchet face, circular socket swelling into a trumpet mouth, and decorated with a raised rope ornament. Figure 277, of the same class, and also drawn one-third the size of nature, from No. 466, on Tray Q, is a slender socketed celt, $4\frac{1}{2}$ inches in length, of an irregular hexagon form in the middle, and circular in the slightly everted and decorated socket. It dif-

fers in the position of the loop, the breadth of the blade, the external shape of socket, and the ornament, from Fig. 276.

Of the same variety are Figs. 278 and 279, drawn one-fourth the natural size, from Nos. 411 and 417, Tray **P**, but differing slightly in ornament and shape of socket; while Fig. 280, No. 460, on Tray **Q**, a small, broad, com-



Fig. 278. No. 411.



Fig. 279. No. 417.



Fig. 280. No. 460.

pressed, highly decorated celt, is shown one-half the size of the original. By Fig. 281 is shown a good specimen of the axe-shaped, socketed celt, drawn one-third the size of nature, from No. 436, on Tray **Q**; it is $3\frac{3}{8}$ inches long by $3\frac{3}{8}$, measured along the cutting edge; although angular outside, the socket is rather oval internally. Fig. 282 shows



Fig. 281. No. 436.



Fig. 282. No. 468.



Fig. 283. No. 558.

the form of raised linear ornament peculiar to the socketed celt. The specimen from which this was drawn, one-third the natural size, No. 468, on Tray **Q**, is $4\frac{1}{2}$ inches long, flat and much compressed on the sides, oval in the socket internally, but irregular externally. Figure 283, No. 558, on Tray **S**, represents one of the finest specimens of the long, narrow,

quadrangular, socketed variety in the Collection, 5 inches long and $1\frac{3}{8}$ broad, with nearly parallel sides, and decorated on each surface as well as round the square socket edge.

Of this rare variety there are only five specimens in the Collection. (See page 429.) Of these, Fig. 284, one-fourth the size of nature, from No. 563, affords a good idea of a short and slightly different form of the same variety. In the following



Fig. 284.
No. 563.

cut (Fig. 285, No. 524), is shown, the exact size, the smallest celt in the Collection, already alluded to at pages 362 and 383.

The oval represented above shows the size of the opening of the socket. The article could not have been of any use either as a tool or weapon, and must be regarded in the light of either a toy or the representative of a socketed celt, made as a figurative emblem for placing in the tomb: numerous examples of such articles, chiefly swords, knives, and daggers, have been discovered in Denmark. (See Worsaae's *Nordiske Oldsager*, last edition, Plate 33.) Another very small socketed celt, although not so minute, forms part of the deposit of antiquities recently made with the Academy by the Royal Dublin Society. (See No. 686, in Rail-case L.)

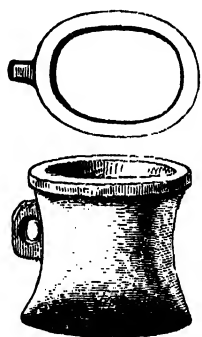


Fig. 285. No 524.

It now remains but to consider the style and variety of ornamentation, and the method of casting these ancient weapons and tools. All nations, no matter how rude and uncivilized, according to our present acceptance of these terms, had some special characteristic and peculiar form of ornament or design. Thus the ancient Scandinavians carved figures of boats, and rude representations of men and animals engaged in battle or the chase, upon the surface of the natural rock.* The North American Indians also indented upon the faces of

* See Holmberg's *Nordbon under Hednatiden*. Stockholm: 1852-4.

large blocks of stone certain characters, consisting of circles, involuted and wavy lines, and other marks resembling the spider's web; and towards Central America the Mexicans carved the figures of men, both on the rocks, *in situ*, and on rude stones, carried to their position by human agency. Upon several of the pillar-stones and monolithic monuments of the world may be found ancient carvings. In Egypt these were a literature, either alphabetical or ideagraphic: but whether, in other instances, these curious engravings, not illustrative of men, animals, or plants, but consisting of mere lines assuming different shapes, and cut into the stone, possibly with a flint and hammer, or with another stone harder than the one acted upon,—were intended simply for ornamentation, or were hieroglyphs having a certain occult meaning like a cypher, and known only to a few persons in the secret, is now but matter of speculation.

Writers on the primeval arts of different nations have left unnoticed those characteristic of the Celtic Irish people, in Pagan and very early Christian times, except such as belong to the architecture, stone tracery, and shrine decoration of the latter period. The abundant supply afforded by the remains of the former epoch in the carvings on the Pagan sepulchres of New Grange, Dowth, and other similar monuments; the various decorations on cinerary urns, and the ornamentation on our earliest metal articles of either gold or bronze, have as yet been overlooked. The carvings upon those ancient sepulchres alluded to consist of zig-zag, chevron, lozenge, fern-leaf, and other straight-lined indentations, apparently cut in with a pick, and in some instances forming intaglios. Another form of marking consists in a number of concentric circles, or highly convoluted spires and volutes, turning one into the other; or of semicircles, pinked, or scalloped patterns, also hollowed from beneath the original surface of the stone. In some instances these spires or volutes are double, the looped end of

the coil forming an obtuse curve within. The spire was subsequently repeated in enamel, as shown by the bead (Fig. 123, at page 165). Wheel-like ornaments are also not uncommon. In a few rare cases both the straight line and spire ornament are beautifully and accurately carved in relief, of which the great stone beneath the mouth of the cave at New Grange is a fine example.* Upon the natural surface of several rocks in the county of Kerry have been noticed small cupped indentations, evidently artificial, and in some instances surrounded by concentric circles, which the Rev. C. Graves, Secretary to the Academy, in a most ingenious paper, read 28th February, 1859, surmised to be plans or maps of forts, although as yet none of them have been identified with existing monuments. The collineation, however, observed both on the artificial indentations on those stones, and the position of the mounds and raths themselves, as may be seen by a reference to the Ordnance Maps, is very remarkable.†

Infinite is the variety of ornament impressed upon the surface of our sun-dried or half-burnt clay urns, as shown by those typical illustrations given from page 177 to 183 of this work, and as shall be again referred to in considering the ornamentation of the precious metals.

The *Ornamentation* on metal celts is of three kinds:—that effected by hammering, or with a punch; by the graver; and in casting. The hammered ornament was introduced very early in what may be termed the infancy of metal celt-making, and is well illustrated by the ornamentation on Figs. 248, 249, and 250, given at page 365. It was apparently effected

* See the engravings of the different varieties of ornament alluded to in the text, given in the Author's "Beauties of the Boyne," from page 192 to 201.

† The plaster cast of one of these indented rocks, called in Kerry *Vousheens*, made many years ago from a stone in the vicinity of Staigue Fort, and presented to the Academy on May 22, 1854, by Dr. Robert Smith, now stands in the hall near the Museum door. See Proceedings, vol. vi., p. 94.

with a sharp-edged tool, and might have been done with a flint or sharp stone celt. It wants the regularity subsequently effected by the punch, but generally consists of a number of oblique indentations, assuming the form of a fern-leaf, or what is termed in masonry herring-bone. Sometimes the hammered decoration took a more definite form, as in Figs. 249 and 250; occasionally it was included within straight lines made by a graver; but that instrument was much less frequently used with the celt than with articles composed of the precious metals, such as the gold ornaments, &c.

The following illustrations afford a good idea of those hammered, punched, engraved, and cast ornaments. The punchings were effected either with a straight chisel, a small round-faced tool, which left a circular indentation on the metal, or an oval or elliptical instrument, hollowed in the centre.



Fig. 286.



Fig. 287.



Fig. 288.

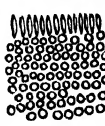


Fig. 289.

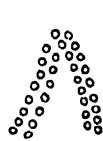


Fig. 290.



Fig. 291.

Fig. 286, from No. 141, and Fig. 287, from No. 138, show the full size, the fern-leaf or herring-bone ornament, the latter having also an engraved line at top. Figure 288, shows the elliptical form of punched decoration, and Figure 289 represents it, as well as the circular ornament, both exhibited on No. 606. Figure 290 illustrates that description of decoration where the dots are arranged in a definite shape, as in the double looped line of the beautiful green celt, No. 607, in Rail-case **K**. The small final cut, Fig. 291, illustrates the combination of the engraved line with the circular dotted ornament on each side of it, from a portion of the decoration on No. 621. Fig. 292 shows the ornamentation on No. 620, where three rows of triangular punched indentations, surrounded by engraved lines, occupy the front of each side.

Figure 293, shows a portion of the lightning-shaped ornament on No. 625, in Rail-case K, and of which that on Fig. 297 is another specimen. The three following cuts, Figs. 294, 295, and 296, drawn the natural size, exhibit forms

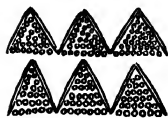


Fig. 292.



Fig. 293.

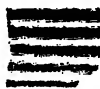


Fig. 294.



Fig. 295.



Fig. 296.

of grooved and roped cast ornament, to be seen on the side of No. 616, and the edges of Nos. 143, and 132. Another description of decoration was achieved by hammering the narrow edge of the celt into a series of lozenge-shaped indentations, as shown on Nos. 72 and 608, page 365.

In the annexed engravings may be seen the relative position which the ornamentation most usually occupies, as well as the general form of the decoration, the details of which have been represented, the natural size, in the foregoing illustrations.

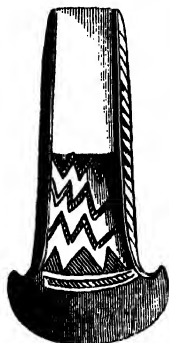


Fig. 297

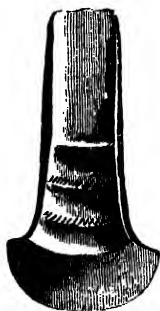


Fig. 298.

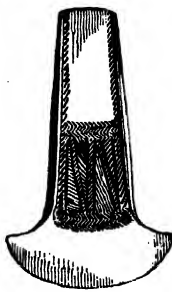


Fig. 299.

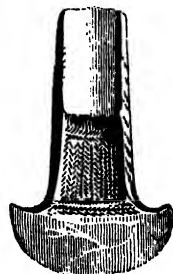
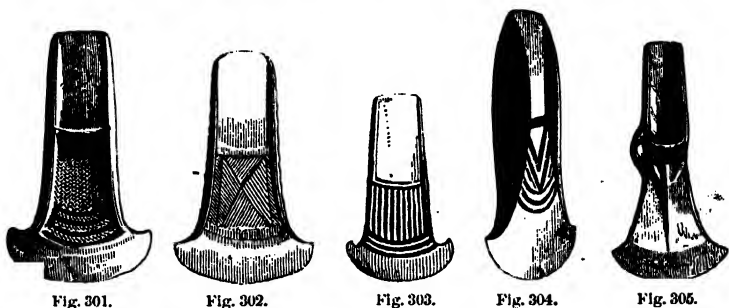


Fig. 300.

Fig. 297, from No. 132, on Tray G, presents the same description of ornament as Fig. 293 from another specimen in Rail-case K. Fig. 298, from No. 124 on Tray G, presents a combination of cast and engraved ornament, having transverse raised ridges below the stop, like some of the markings

on the upright stones of the passage entering New Grange, the summits of these ridges have been tooled with the usual fern-mark, as shown in the illustration. Fig. 299, from the gold-coloured cleaned celt, No. 627, in Rail-case **K**, presents a different form of engraving on each side. This is not an uncommon occurrence with the engraved celts; but although the pattern may differ slightly on each face, the style of workmanship and general character of the ornament remains the same. Figure 300, from No. 142, Tray **G**, shows a form of herring-bone ornament, like that the natural size in Fig. 287.



Of the same class is Fig. 301, from No. 141. Fig. 302, from No. 140, resembles No. 627, already described, and figured.

The three next illustrations are good specimens of the forms of cast ornament on three descriptions of celts;—the simple long and narrow, having slight flanges and a lunette edge, with recurved points, as shown by Fig. 303, from No. 169; the broad-winged celt without a loop, Fig. 304, from No. 204, Tray **I**, which shows both the side and front decoration; and Fig. 305, from No. 346, on Tray **N**, a narrow looped side-socketed palstave, with a bow-and-arrow ornament below the stop, common to the great majority of decorated celts of this variety. The dimensions and other circumstances relating to the different specimens from which the foregoing illustrations have been taken, will be found in the details of the different Trays and Rail-cases in which they are placed.

The ornamentation upon the socketed celts has been already referred to at page 384, and illustrated by Figs. 282 and

283; and, as previously stated, it is always cast, and in no instance has a tooled ornament been observed upon a celt of this description. Nos. 558, 562 to 566, and 569, Tray **S**, show the form of raised line, ending either in a circle or a series of small elevated knobs which specially characterize that implement. Occasionally the insertions of the loop spread out in an ornamental fashion for a short way over the sides of the socket, and in No. 379, on Tray **O**, the profile view of which is shown in the accompanying wood-cut, may be observed a number of raised lines like cast-marks, but presenting too great regularity to suppose such to be the case.



Fig. 306.

Moulds.—The celts were made in three kinds of moulds, viz.:—Of stone; of sand or clay, in the same manner as modern castings; and in those of metal. The ancient stone celt moulds which have come to light are of two kinds,—the single, consisting of an indentation cut on the side of a block of stone, and without a counterpart; and the double, formed of two portions fitted together, and usually employed for casting celts of the palstave variety, while the former were chiefly employed for making the simple flat axe-shaped variety. The Academy possesses specimens of both these kinds of celt moulds, and two of them are represented and described at page 91: see Figs. 72 and 73.

Another double celt mould has been recently purchased by the Academy; it is of the same description as No. 84, already referred to at page 91. There is also one in the Museum of Trinity College: and others are in private Collections.

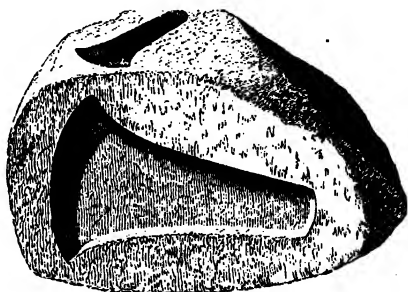


Fig. 307.

The accompanying cut is drawn from a plaster cast, the original of which was found at Ballynahinch, county of Down, and now in the Museum at Belfast. It con-

tains moulds for four celts (see *Archæological Journal*, vol. iv. p. 327), the largest of which is 6 inches long by $4\frac{1}{4}$ broad.

The second method was in temporary moulds of clay, sand, or marl, to which, in the case of socketed celts, a core must have been adjusted; but no vestige of such a mode of working could have come down to the present time. Models in wood or clay must have been made for these sand moulds. It is, however, remarkable that of the 686 celts in our Collection, no two appear to have been cast in the same mould; there are no exact duplicates.

The third method of casting celts was in a bronze mould, of which there are six specimens in the British Museum: that figured below, one-third the natural size, was found in England, and described by Borlace and Lort in the *Archæologia*, vol. v.; but they supposed it to have been a celt-case. Vallancey, with all his faults, had a clear perception of what these so-called metal "celt-cases" were, and says:—"I cannot conceive why these gentlemen hesitate to call them moulds; as a certain proof that they were manufactured in Ireland, where the Romans came not either as friends or foes, the moulds are found in our bogs; they are of brass also, mixed with a greater quantity of iron, or in some manner tempered much harder than the instruments."—"Collectanea," vol. iv., p. 59. He also figures a bronze mould. Mr. Du Noyer has also in his paper, already referred to, shown that it was a true celt-mould, and explained the way in which metal could be cast from metal, by greasing or even coating the interior with lamp-black. Both these cuts represent the inner and outer faces of the same side; and the raised ornamental loops on the latter



Fig. 308.



Fig. 309.

are believed to have been intended for securing the tying when the moulds were joined preparatory to casting. As already explained at page 383, and also in the detailed descrip-

tion of Trays **O** and **P**, two or more cores, possibly of wood, were employed in casting socketed celts.*

In colour the celts afford, in their present condition, but little variety: the copper ones are of a light brown, and, when perfect, are smooth and uniform on the surface. Besides their peculiarity of form, they can be easily distinguished from the æruginous green hue of the bronze. Most of the perfect bronze celts have this tint in a more or less degree, according to their amount of preservation, but some more than others: for example, those beautiful specimens, Nos. 607 and 608 in Rail-case **K**. This beautiful dark green, smooth, and polished surface is produced by artificial malachite or carbonate of copper, into which the external lamina of the surface has, in process of centuries, been converted; and which, having once formed, serves to prevent oxidation, and admits of a high polish.† Many specimens, especially of the socketed variety, are covered with a brown coating of considerable thickness, and so complete as to obscure all traces of the original surface of the bronze; this, upon analysis, is proved to be chiefly iron, and was probably deposited on the surface of the implement while lying for a length of years in peat, which is frequently much impregnated with ochre or bog iron.‡ In some instances,—for example, No. 153, on Tray **H**, the brown ochrey crust has been deposited like a varnish on the surface of the previously formed carbonate of copper.

* Also see the "Archæology and Prehistoric Annals of Scotland," pp. 222 to 225, where several authorities bearing on the subject are quoted.

† M. Alphonse Gages, Curator of the Industrial Museum, has examined several of these green celts, and proved the existence of artificial malachite in each.

‡ No. 455, on Tray **Q**, has four Irish letters rudely graven on one side, where it is thickly coated with brown iron incrustation, which can easily be cut with a knife, and as these letters must have been cut after the article had, by lying for ages in bog, acquired this deposit, it shows that they are of modern date compared with the age of the weapon. Professor W. Barker first informed me that this deposit was iron. A similar celt, No. 665, in Rail-case **K**, covered with a like natural deposit, has been carefully analyzed by M. Gages, and found to present the following composition:—Traces of organic matter; silica and alunina; hydrous oxide of iron, or brown iron ore; oxide of copper.

Several of the best preserved and most highly decorated celts in the Collection are covered with a patina, or thin layer, or what would appear at first sight to be a lacquer or varnish, like that applied over modern brass, to protect it from the oxidizing effects of the atmosphere.* It would be interesting to find that our ancient metallurgists adopted means for defending the surface from oxidation.

In order to show the true colour of the metal, such as it must have appeared when the instruments were new, several of them have been cleaned, and these generally exhibit the finest gold colour, the hue probably differing slightly according to the amount of tin, lead, or sulphur in their composition.

From the great number, variety, and general distribution of these articles, Ireland may be said to be, *par excellence*, the country of the metal celt, as Scandinavia is of that of flint and stone. We know of upwards of two thousand metal celts now in this country; and the British Museum, as well as many other collections in England and Scotland, is enriched with Irish specimens. Like its predecessor in stone, the metal celt had a very wide distribution, and has been found in every country in Europe, from the River Tiber to the Malar Lake, but differing slightly in shape and ornamentation from those found in the British Isles.

In the adjoining cut is figured the remarkable and unique bronze celt, and referred to at page 367, cast apparently in a mould formed upon a stone implement of the same class of weapon.† Among the antiquities procured with the Dawson Collection is one side of a bronze

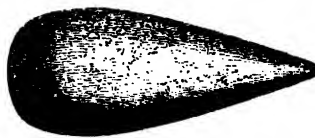


Fig. 310.

* On a celt which I submitted to Dr. Aldridge some years ago, he found the patina or varnish to be of a vegetable nature, resembling a gum resin. This organic matter may, however, have been derived from the locality where the article lay.

† The Author is indebted to Herr Olfers, Director of the Royal Museum at Berlin, for the beautiful cast of this celt, now in the Academy's Collection; and also to Professor Magnus for his great civility in forwarding it in time for publication here.

mould, $4\frac{1}{2}$ inches long and $3\frac{1}{8}$ wide, and here represented one-fourth the natural size, Fig. 311. By Figure 312 is shown in profile a plaster cast from this mould. Although shorter it belongs to the same class of object as the Etruscan celt figured above. Such pellets, formed of hard clay or brick, may have been used as offensive weapons, and projected either from the sling or some other engine, of which we have at present no record. (See Nos. 2 and 3 in Rail-case L.)

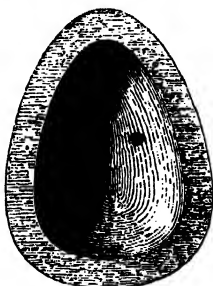


Fig. 311.

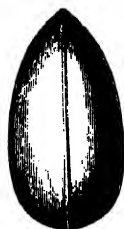


Fig. 312.

The following is a detailed catalogue of all the bronze celts in the Museum:—

SOUTHERN GALLERY.—BRONZE I.

THIRD COMPARTMENT, END-CASE.—SHELF I., Tray A, contains twenty-six flat, rude, Copper Celts, numbered from 1 to 26.—No. 1, a plain celt of red copper, figured and described at p. 363. No. 2, a plain cuneiform celt, much corroded, 4 inches long. No. 3, a cuneiform celt of the same variety as No. 10, figured and described at p. 363, and which the great bulk of the celts on this Tray resembles; it is $3\frac{3}{4}$ inches long by $2\frac{1}{8}$ wide; it was found in the River Bann, at the Cutts, near Coleraine, and was—*Presented by the Board of Works*. No. 4, a small, rude celt, from which the mould markings have never been removed; it is 3 inches long, $1\frac{7}{8}$ wide in the broadest part, and is marked "Killala, county of Mayo." No. 5, a triangular celt, narrower at the small end than any other specimen in the Museum, $4\frac{3}{4}$ by $2\frac{3}{4}$ across the broadest edge. No. 6, rude and imperfect, 3 by $2\frac{1}{2}$. No. 7, imperfect at small end, $3\frac{1}{2}$ by $2\frac{3}{8}$. No. 8, a very good specimen, in excellent preservation, and the most perfect of the specially-formed copper celts; very sharp at both extremities, bearing marks of sharpening on lower cutting face; $4\frac{1}{2}$ by 3. No. 9, of the same variety, but proportionally longer; corroded, $4\frac{1}{2}$ by $2\frac{3}{4}$. No. 10, a very perfect specimen, and

typical of its class, of red metal, cleaned, figured, and described at p. 363. No. 11, a very perfect specimen of the same variety, but broader in the cutting face, $5\frac{1}{4}$ by $3\frac{1}{2}$; it has become green on the surface, and probably contains some tin.—*Deposited by the Royal Dublin Society*, and marked No. 4. No. 12, one of the largest of the copper celts, round in the cutting face, $6\frac{1}{4}$ by 4. No. 13 is of the same variety, cleaned, $6\frac{1}{4}$ by $3\frac{3}{4}$; it shows the bad casting and want of closeness in the metal. No. 14, ditto, 6 by $3\frac{3}{4}$.—*Deposited by the Royal Dublin Society*. No. 15, a fine specimen, in good preservation, of same variety as No. 8; it is 5 by $3\frac{3}{4}$.—*Deposited by the Royal Dublin Society*. No. 16, a small, imperfect celt, $4\frac{1}{2}$ by $3\frac{1}{4}$, marked 395, a portion was removed at upper end for analysis by Mr. Mallet (see No. 2, in 'Transactions, vol. xxii., p. 322). No. 17, a very perfect specimen of the broad variety, like No. 8, slightly corroded on surface, $4\frac{1}{4}$ by $3\frac{1}{2}$. No. 18, simple, wedge-shaped, rude, like a stone celt, slightly corroded, $4\frac{3}{4}$ long by $2\frac{3}{4}$ on cutting face, and 2 inches at narrow end. No. 19, thick, short, lunette-edged, imperfect at small end, marked on surface by mould, $4\frac{1}{2}$ by $3\frac{1}{4}$.—*Presented by the Board of Works*. No. 20, a smooth, and tolerably good specimen, $4\frac{3}{4}$ by $3\frac{1}{4}$; unsymmetrical, like 25,—for, as placed upon the Tray, the upper edge is longer than the lower.—*Presented by R. M. Carnegie, Esq.*, in 1852 (see Proceedings, vol. v., p. 295). No. 21, perfect, small, slightly corroded, thick like the generality of copper celts, which are thicker than those of bronze, $3\frac{1}{2}$ by $2\frac{3}{4}$, (from Major Sirr's Collection). No. 22, a good specimen, slightly imperfect on cutting edge, thick, $4\frac{3}{8}$ by $2\frac{3}{4}$. No. 23, perfect and in good preservation; surface marked by mould, 4 by $2\frac{3}{4}$.—*Presented by the Executors of Leslie Ogilby, Esq.* No. 24, a good specimen, well preserved, thin and flat, 4 by $2\frac{3}{4}$. No. 25, very rude and much corroded, unsymmetrical like No. 20, $4\frac{1}{2}$ by $2\frac{3}{4}$. No. 26, perfect and in good preservation, with narrow upper end, 4 by 3.

For the remainder of the copper celts, see description of Rail-case K, described at p. 431.

SHELF I., Tray B, contains eleven Bronze Celts of the largest size, plain and axe-shaped; numbered from No. 27 to 37.—No. 27 is the largest specimen in the Collection, figured and described at p. 364; in fine preservation, except a few small gaps in the hatchet face, and a small, circular hole, caused by a flaw in the metal on the side at

the broad end; the cutting edge bears marks of sharpening. It is $\frac{3}{8}$ ths of an inch thick, and very flat on the surface. No. 28, of the same class, but smaller, and proportionably shorter; is slightly imperfect at upper extremity, where it spreads a little outwards on each side, $6\frac{1}{8}$ inches long, by 5 wide across cutting edge, found at Keelogue Ford, between the counties of Galway and Tipperary. —*Presented by the Shannon Commissioners.* No. 29, a very fine specimen, and in tolerably good preservation; of the true hatchet shape; some slight remains of raised ridges appear on the surface; side edge angular; a little more than 9 inches long, by $6\frac{3}{4}$ broad across the blade, and $1\frac{3}{4}$ at the narrow end. No. 30, a good specimen, thin, flat, the upper edge somewhat longer than the lower, thus resembling with its neighbour, No. 31, some of the iron axes of later times $7\frac{3}{8}$ by $5\frac{1}{2}$. No. 31, a large specimen, unsymmetrical, slightly corroded on surface, $7\frac{3}{4}$ by $6\frac{1}{2}$. No. 32, tolerably perfect in shape, but corroded on surface, $6\frac{1}{4}$ by $4\frac{3}{4}$. No. 33, a very perfect specimen, and in good preservation, rounded at small end, $6\frac{3}{4}$ by $4\frac{5}{8}$, (from the Dawson Collection). No. 34, a small but perfect specimen of this variety, and resembling the former in shape, 6 by $4\frac{3}{8}$. No. 35, a very remarkable specimen, although imperfect, and not in good preservation; it has been decorated with a double dotted line, like that represented by Fig. 290, page 389; it is also slightly unsymmetrical, $5\frac{7}{8}$ by $4\frac{3}{4}$. No. 36, a fine specimen in good preservation, 6 by $4\frac{3}{4}$. No. 37, a very fine specimen, and in admirable preservation, the metal resembling in colour the Dowris bronze; $7\frac{1}{8}$ by $5\frac{1}{2}$; found at Cornacarrow, in the Shannon workings, and—*Presented by the Shannon Commissioners.*

SHELF I., Tray C, contains nineteen bronze celts, axe-shaped plain, large and small; numbered from 38 to 56. No. 38, a good typical specimen, and in fine preservation, $5\frac{1}{2}$ inches long by $4\frac{1}{4}$ wide. No. 39, narrow at small end, worn at both extremities, $4\frac{1}{2}$ by $3\frac{1}{4}$. —*Presented by Lord Farnham.* No. 40, a small but perfect specimen, $3\frac{3}{4}$ by $2\frac{3}{4}$. No. 41, a very rude specimen, apparently cast in one of the early stone moulds, flat, thin, 4 by $2\frac{1}{2}$, at broad end, and $1\frac{1}{2}$ at small extremity.—*Deposit Royal Dublin Society.* No. 42, a smaller specimen of this variety, a portion removed at upper end, $2\frac{3}{4}$ by $2\frac{1}{4}$, marked "Tipperary," (from the Sirr Collection). No. 43, of a peculiar form, like Nos. 144 and 145, on Tray G, the latter figured

at p. 365; edges sharp; sides rounded off; a portion of the small end has been cleaned to show the colour of the bronze, it is 4 inches long by $3\frac{1}{4}$ broad. No. 44, a very fine specimen, forming part of the deposit of the Royal Dublin Society; an elevated marginal ridge runs along the sides. This is a rare peculiarity. A portion of the small extremity has, however, been removed; it now measures 6 long by $5\frac{1}{8}$ across the width of the blade. No. 45, a small, rude, imperfect specimen, 3 by $2\frac{1}{4}$; of the same character as No. 41. No. 46, rude, flat, thin, triangular, corroded, the cutting edge rounding off into the sides, $4\frac{3}{4}$ by $3\frac{1}{4}$. No. 47, much corroded, rude in shape rather circular in cutting face, $5\frac{1}{2}$ by $3\frac{1}{4}$, "found, in the year 1840, in the bed of the Carrhen River, barony of Iveragh, county of Kerry." This, together with Nos. 49, 53, and 55, were—*Presented by Maurice O'Connell, M. P.* (See Proceedings, vol. iv., p. 166). The oxidation on these bronzes shows the effect of that process when such articles are exposed to the action of water. No. 48, slightly imperfect at top, thin, flat, with round edges, $4\frac{1}{2}$ by 4. No. 49, long, much corroded, imperfect at top, 6 by $3\frac{3}{4}$; found in the Carrhen river with No. 47. No. 50, a good specimen, in fine preservation, of bright yellow bronze, triangular, 5 by $3\frac{3}{4}$. No. 51, imperfect at small extremity, surface not in good preservation, of a coppery hue, $5\frac{1}{2}$ by $4\frac{3}{4}$. No. 52, long, slightly imperfect, $5\frac{1}{2}$ by $3\frac{1}{2}$. No. 53, long, much corroded from lying together with Nos. 47, 49, and 55, in the Carrhen River; $6\frac{3}{4}$ by $4\frac{1}{4}$. No. 54, a good specimen of the axe-shaped celt, slightly imperfect, corroded, $6\frac{1}{4}$ by 5.—*Presented by the Executors of Leslie Ogilby, Esq.* (see old Museum register, MS., vol. i., p. 226). No. 55, an axe-shaped celt, thick, corroded from lying in the water, $7\frac{1}{4}$ by $5\frac{1}{4}$. No. 56, a large specimen of axe-shaped celt, thin, and much indented on surface as if from imperfect casting, 7 by $5\frac{1}{4}$.

SHELF I., Tray D, contains sixteen long celts, some ornamented, —numbered from 57 to 72. The long variety described at page 365 commences on this Tray, on which there are several very fine specimens. No. 57, the largest long, narrow celt in the Collection, is slightly imperfect on the cutting edge, has a rudimental stop ridge, side edges slightly elevated above the flat, as if by hammering, by which process also a rude form of decoration has been produced on them like No. 72, Fig. 248, p. 365. The small extremity on this,

and all the other celts of the same variety, is sharp and slightly rounded, as if for use when passed through the handle. It is $8\frac{3}{4}$ inches long, $4\frac{1}{2}$ across the face of the blade, $1\frac{1}{2}$ at the small extremity, and $\frac{1}{2}$ thick.—*Presented by W. R. Wilde, Esq.* (see Proceedings, vol. iii., p. 539). No. 58 is slightly ornamented with fern-leaf markings towards the small extremity, and radiating grooves near the blade, $7\frac{1}{4}$ by $4\frac{1}{4}$.—*Presented by W. R. Wilde, Esq.* No. 59, a perfect specimen, in good preservation, plain, flat, and thin, $7\frac{1}{4}$ by $4\frac{1}{4}$. No. 60, plain, thin, flat, slightly unsymmetrical, $7\frac{1}{2}$ by 4. No. 61, perfect, narrow, with rudimental stop-ridge, and remains of crust, $6\frac{3}{8}$ by $3\frac{1}{4}$, (from Sirr Collection). No. 62, a fine specimen of the long variety, coated with a brownish-red crust, has a grooved decoration on the flat surface, like No. 58; the indentations radiating from the centre towards the cutting edge, $8\frac{1}{4}$ by $4\frac{3}{4}$. No. 63, a perfect specimen; cutting edge rather straight; 7 by $3\frac{1}{4}$. No. 64, of bright yellow bronze, imperfect at extremities, rudimental stop, side edges elevated; presents the remains of two forms of ornamentation; below the stop are a series of linear indentations, apparently produced by a hammer or punch, and at the small extremity may be seen clusters of small circles like the domino decorations observed on bone articles; 7 by $3\frac{1}{4}$. No. 65, rude, plain, flat, bearing some marks of hammered ornament, covered with patina about the centre, marked "Sligo," $6\frac{5}{8}$ by 3. No. 66, in tolerable preservation, of bright yellow bronze; some traces of fern-leaf ornamentation on side, not unlike that on one of the stones at New Grange, $7\frac{1}{4}$ by $3\frac{1}{2}$.—*Presented by the Shannon Commissioners.* No. 67, a perfect specimen, apparently ground on the hatchet face, and covered all over the lower two-thirds of the side with hammered indentations, $6\frac{1}{4}$ by $3\frac{3}{8}$. No. 68, very rude, corroded, round in the hatchet face like No. 46, on Tray C, and narrow in the shaft, $6\frac{1}{4}$ by $2\frac{3}{8}$ ths. No. 69, perfect, and ornamented on the sides and edges, the former with six ribs, each half an inch apart, the latter with the same form of ornament placed obliquely, so as to give it a roped appearance; has some remains of patina at the sides; $6\frac{3}{4}$ by $3\frac{3}{4}$. No. 70, long, narrow, slightly imperfect at small extremity, much hammered on the flat of the edges, 7 by $3\frac{1}{8}$. No. 71, broad, tolerably perfect, $6\frac{1}{2}$ by $4\frac{1}{2}$. No. 72, a very beautiful long celt, figured and described at page 365, ornamented on both sides

and edges; cleaned to show the beautiful golden lustre of the bronze.

SHELF I., Tray E, contains eighteen celts, chiefly of the long, narrow variety; numbered from 73 to 90. No. 73, a small, flat celt, rather thick in the middle, $4\frac{1}{2}$ inches long by $2\frac{3}{4}$ wide in the blade; in fine preservation, a slight hammered ornament on the edges. Found at Newington, county of Kildare, and—*Presented by James Forbes, Esq.* No. 74, a good specimen of this variety, of yellow bronze, rather straight in the cutting edge, and round at the top, $5\frac{1}{4}$ by $2\frac{7}{8}$; procured, with a number of others, from Mr. Murray, of Mullingar. No. 75, of bright yellow bronze, slightly imperfect at small extremity; a rude hammered ornament, radiating toward the cutting edge, spreads over the side; it is also irregularly hammered above the edge; 5 by $3\frac{1}{2}$. No. 76, rude, flat, perfect, presenting all the appearance of the copper type, both in shape, surface, and colour, the admixture of tin being probably very slight, $5\frac{3}{8}$ by $3\frac{1}{4}$. No. 77, plain, flat, rather broad, rude in shape but in perfect preservation; $4\frac{5}{8}$ by 3. No. 78, long, narrow, corroded; imperfect at top, where a portion has been cut off; $5\frac{3}{4}$ by $3\frac{3}{4}$. No. 79, long, narrow, round-faced, $5\frac{3}{4}$ by $2\frac{1}{2}$. No. 80, a perfect specimen of the long, narrow variety; 6 by $3\frac{1}{8}$.—*Presented by the executors of Leslie Ogilby, Esq.* No. 81, a perfect specimen, plain, rather broad, like those on Trays B and C, slightly corroded, $5\frac{1}{4}$ by $3\frac{3}{4}$. No. 82, long and narrow, imperfect at both extremities, dark coloured; a punched or hammered ornamentation occupies the middle of the sides and the edges, somewhat like No. 72; $6\frac{1}{4}$ by $2\frac{7}{8}$. No. 83, a perfect specimen of the long, narrow celt; of bright yellow bronze, half an inch thick in the middle, a punched or hammered ornament occupies the side, and spreads out into a fork towards the cutting edge, leaving a large interspace free from decoration; several of the elliptical decorations which produce this ornament are half an inch long; $5\frac{3}{4}$ by $3\frac{3}{8}$. A rare peculiarity in this celt consists of what is technically termed a *wind* in the cutting edge, somewhat like that observed in most of the stone celts. No. 84, a good large specimen of the long, narrow celt, and, except some gaps in the cutting edge, in fine preservation; a slight rudimentary stop, immediately behind which the sides are compressed, and afterwards spread out into the usual thin, curved extremity; pleasingly ornamented on the side

with greater regularity than that seen on those previously described, except No. 35 on Tray B; the ornamentation was effected with the punch or hammer, but with great regularity both in design and execution, and is worthy of illustration, $7\frac{3}{4}$ by $3\frac{1}{4}$.—*Presented by the executors of Leslie Ogilby, Esq.* No. 85, a plain celt, rather broad in comparison with the rest of this variety; 6 by $3\frac{1}{4}$. No. 86, long and narrow, imperfect at cutting edge; $7\frac{1}{2}$ by $3\frac{1}{8}$. No. 87, long and narrow, thin, rude, unsymmetrical, slightly imperfect from corrosion; $6\frac{3}{4}$ by $3\frac{1}{4}$. No. 88, long and narrow, very much corroded; 7 by $3\frac{3}{8}$. No. 89, a very perfect specimen of the long narrow celt; $7\frac{1}{2}$ by $3\frac{3}{4}$; found at Galway, and—*Presented by R. A. Gray, C. E.* No. 90, a long, narrow celt, thick and heavy, sharp at the small extremity; $7\frac{1}{2}$ by $4\frac{1}{4}$.

SHELF I., Tray F, contains thirty small, rude, slender, celts, chiefly of the long, narrow variety,—numbered from 91 to 120. No. 91, small, corroded, but with part of patina still remaining, $4\frac{1}{4}$ inches long, by $2\frac{1}{4}$ broad. No. 92, somewhat broader than the generality of this variety, brassy in appearance, grooved longitudinally on the surface, apparently in the mould, the only instance of that kind of decoration in the Collection, $4\frac{3}{4}$ inches by $2\frac{1}{2}$. No. 93, long and narrow, partly imperfect at top, has a rise in the shaft like a rudimentary stop; slightly unsymmetrical the upper edge being longer than the lower; $5\frac{3}{8}$ by 3, (from Dawson Collection). No. 94, long and narrow, tolerably perfect, and in good preservation, has an elevated ridge like the foregoing, $5\frac{1}{2}$ inches by $2\frac{5}{8}$, (Dawson). No. 95, long and narrow, broad in the blade, hammered at the small extremity, $5\frac{1}{2}$ by 3, (Dawson). No. 96, a rude specimen, badly cast, with a flaw on the surface, $5\frac{5}{8}$ by 3, (Dawson). No. 97, a perfect specimen, with a portion of the lacquer or patina remaining, $5\frac{3}{4}$ inches by 3, (from the Sirr Collection). No. 98, perfect, long and narrow, thick in the middle of the shaft, slightly decorated with an irregular punched or hammered ornament all over the surface from an inch above the cutting edge, $5\frac{7}{8}$ inches by 3; it appears to have been slightly bent in the casting. No. 99, rude, plain, and slightly corroded, $5\frac{1}{2}$ inches by $2\frac{1}{2}$, (Sirr). No. 100, a very rude and much corroded specimen, $5\frac{3}{4}$ inches by $2\frac{3}{4}$.—*Presented by Lord Farnham.* Nos. from 101 to 110, in the middle row of this Tray, are specimens of the longest variety of the long, narrow celt;

No. 101, in good preservation, small, thin, flat, 3 inches by $1\frac{1}{2}$; this and most of the other small specimens of the same class were, probably, stuck into, but not passed through, the knobbed end of a wooden handle, like the African specimen, Fig. 256, p. 370. Found in the bed of the Scariff River, county of Clare.—*Presented by the Shannon Commissioners.* No. 102, slightly imperfect, long and narrow, the sides being nearly parallel, 4 inches by $1\frac{1}{2}$. No. 103, of the same description, but more triangular, very thin, slightly corroded, cracked in the centre, $3\frac{3}{4}$ inches by $1\frac{3}{4}$. No. 104, ditto, but rather broader in the blade, $3\frac{1}{2}$ inches by $1\frac{3}{4}$. No. 105, long, imperfect, a slight stop ridge near the centre, $3\frac{1}{2}$ inches by $1\frac{1}{2}$. No. 106, thin and narrow, $3\frac{3}{4}$ inches by $1\frac{3}{4}$. No. 107, of very yellow bronze, round at the cutting edge, $3\frac{3}{8}$ inches by $1\frac{7}{8}$. No. 108, short, broad, flat, perfect, $3\frac{3}{8}$ inches by $2\frac{1}{8}$. No. 109, a small, perfect, long and narrow, thicker than usual, $4\frac{1}{8}$ inches by $2\frac{1}{8}$. No. 110, perfect, rather broad in the shaft and small end, $4\frac{1}{4}$ inches by 2; found in gravel, four feet under the surface of the bed of the Clare River, townland of Lehid, barony of Dunmore, county of Galway.—*Presented by the Board of Works.* The remaining specimens in the third row, from No. 111 to 120, are of the rudest description, some of them badly cast, and several much corroded. No. 111, long and narrow, corroded, 4 inches by $1\frac{7}{8}$. No. 112, very narrow in the shaft compared with its length, rather in imperfect preservation, contracted where the stop sometimes exists; $4\frac{1}{4}$ inches by $1\frac{5}{8}$ wide in the cutting edge, and $\frac{3}{4}$ across the narrowest part of the shaft, (Dawson). No. 113, thin, flat, somewhat triangular, rather straight in the cutting edge, corroded, $4\frac{1}{2}$ inches by $2\frac{3}{8}$. No. 114, thin, rude, much corroded, $4\frac{1}{2}$ inches by $2\frac{1}{4}$.—*Presented by Lord Farnham.* No. 115, ditto, very rude, and greatly corroded, as if from long immersion in water, 5 inches by $2\frac{1}{4}$. No. 116, imperfect and in bad preservation, $4\frac{3}{8}$ inches by $2\frac{1}{4}$. No. 117, long and narrow, round in the cutting edge, irregular on surface, a slight rudimental stop ridge; 5 inches by 2. No. 118, long and narrow, coppery on the surface, unsymmetrical, has a rude hammered ornament on the middle of flat surface, $5\frac{1}{4}$ inches by $2\frac{3}{8}$. No. 119, imperfect, slightly bent, the thinnest specimen for its size in the Collection; covered with verdigris; the cutting face nearly straight, the narrow end oblique, $5\frac{1}{2}$ inches by 3; this is one of the rudest specimens in the Museum,

except those on Tray A, it is either of great age or was made by a bad workman, (Sirr). No. 120, coppery, slightly corroded, $5\frac{1}{2}$ inches by $3\frac{1}{8}$.

SHELF I., Tray G, contains twenty-five celts, long and narrow, broad-edged, several ornamented; numbered from 121 to 145. Upon this Tray we first observe the lunette and saddler's knife-shaped face, described at page 375; the ornamentation also becomes more distinct, regular, and graceful. No. 121 a very small, rude, badly cast specimen of the thin, narrow, celt, but with a broad cutting face projecting considerably beyond the line of the shaft, the hatchet edge is quite blunt and round, apparently so in the original casting; only $2\frac{3}{8}$ inches long, by $1\frac{3}{8}$ across the blade. No. 122, long and narrow, sharp at the angles, slight rudimental stop, below which there is a broad, rudely hammered ornament, $4\frac{1}{4}$ inches by $1\frac{3}{4}$. No. 123, in imperfect preservation, long, narrow, slightly winged, with a rudimentary stop, saddler's knife-shape in the cutting edge; $4\frac{1}{4}$ inches by $1\frac{7}{8}$, and $\frac{1}{2}$ in depth across the centre of the wing; this is the first specimen, according to the arrangement of the Collection, in which we meet these three peculiarities combined. No. 124, a perfect specimen of the lunette-edged celt, in fine preservation, the flanges slightly developed; of a very dark green colour, either owing to the skin which has formed on it, or from the original lacquer; $4\frac{1}{2}$ inches by $2\frac{3}{8}$; it is beautifully decorated on the flat surface by four ridges, raised in the casting, the three uppermost of which are tooled with the fern-leaf marking; the edges are also decorated with a rope pattern (see Fig. 298, p. 390). No. 125, small, very rude, narrow, coppery, semicircular in the cutting face, $3\frac{3}{4}$ inches by $1\frac{3}{8}$. No. 126, ditto, very rude, unsymmetrical, but with the side edges partially raised into flanges, $3\frac{1}{8}$ inches by $1\frac{1}{4}$. No. 127, small, $4\frac{5}{8}$ by $2\frac{1}{2}$.—*Presented by R. A. Gray, C. E.* No. 128, remarkably short, recurved lunette-shaped, very thick, flanged; the only specimen of the kind in the Collection, $3\frac{1}{4}$ inches by $2\frac{3}{4}$ (see Fig. 264, p. 378), it was found in the cuttings at Keelogue ford, in 1843, and—*Presented by the Shannon Commissioners.* No. 129, small, rudimental stop, slightly grooved on surface by elevation of the flange-like edges, $2\frac{7}{8}$ inches by $1\frac{5}{8}$. No. 130, ungraceful in form, thick, $3\frac{5}{8}$ inches by $1\frac{1}{2}$. No. 131, brassy, in good preservation, but partaking more of the simple, flat, broad, hatchet-faced variety, than any of the other examples on

this Tray, $5\frac{1}{2}$ inches by $3\frac{1}{4}$.—*Presented by R. A. Gray, C. E.* No. 132, long, narrow, lunette-edged, with recurved extremities, rudimental stop and flange, decorated upon both flat surface and side edges, $5\frac{1}{2}$ inches by $2\frac{3}{8}$ (see Fig. 297, p. 390). No. 133, fractured in centre, punched ornament, slightly elevated edges, 5 inches by $3\frac{3}{8}$. No. 134, in fair preservation, long and narrow, an irregular hammered ornament on the lower and middle of flat surface, $5\frac{3}{4}$ inches by 3. No. 135, a good specimen of the long, narrow celt, slightly imperfect at small end, coated with a green patina, highly decorated, 7 inches by $3\frac{1}{2}$ (see Fig. 250, p. 365). No. 136, a good example of the saddler's knife-blade, rudimental curved stop, slight flanges, $6\frac{1}{4}$ inches by $2\frac{3}{4}$, and $\frac{1}{8}$ thick across the side of flange. No. 137, long and narrow, slightly corroded, round cutting edge, rudimental flange and stop, $6\frac{3}{4}$ inches by $3\frac{1}{4}$. No. 138, a fine specimen, in perfect preservation, delicately tooled with herring-bone marking all over surface of middle third; this specimen is well worthy of illustrations; $6\frac{1}{2}$ inches by $2\frac{5}{8}$. No. 139, imperfect in the cutting edge, rudimental flange and stop now $6\frac{1}{2}$ inches by $2\frac{3}{4}$. No. 140, very perfect, and in fine preservation, brassy in colour, slight stop and flange, appears to have been sharpened by grinding or whetting, decorated with a regular pattern upon the middle third of the flat, and a rope-like ornament on edge; 5 inches by $2\frac{7}{8}$ (see Fig. 302, p. 391). No. 141, a very fine specimen, lunette-edged, slightly corroded at small extremity, rudimental wings and stop beautifully decorated on surface, both in casting and by hand; $5\frac{3}{8}$ inches by $2\frac{1}{4}$ (see Figs. 286 and 301). No. 142, small, in perfect preservation, covered with a brownish patina, blade semilunar, slight flanges run over rudimentary stop ridge, decorated on sides and flat surface, both in casting and by hand; $4\frac{1}{4}$ inches by $2\frac{1}{2}$ (see Figs. 287 and 300, pp. 389 and 390). No. 143, narrow, rude, imperfect at small extremity; here the curved stop ridge rises to level of straight flanges, rudely hammered decoration on flat and edges; $4\frac{3}{4}$ inches by $2\frac{1}{4}$. No. 144, which is slightly unsymmetrical, is $5\frac{5}{8}$ inches long by $3\frac{1}{2}$ broad at the cutting face, and $1\frac{1}{2}$ across the small extremity; this celt, with 145, and No. 43, on Tray G, are remarkable and rare specimens of thin, flat, broad-faced, plain celts of which No. 145, the typical specimen*, has been described, at p. 365, Fig. 251. No. 145 is a long specimen of the same variety, figured and described as above.

SHELF I., *Tray H*, contains twenty-eight specimens of the long, narrow celts, chiefly lunette-edged, some slightly ornamented; numbered from 146 to 173. No. 146, an encrusted, plain, flat specimen of the long, narrow variety, without flanges, but having a rudimental stop; has a slightly tooled decoration on middle third; $6\frac{1}{4}$ inches long by $3\frac{1}{4}$ broad at cutting face. No. 147, rude, small, lunette-edged; $3\frac{1}{2}$ by 2. No. 148, a fine, well-cast specimen, in good preservation, except a slight flaw at the small extremity, hatchet-faced, raised edges, slightly ornamented in the casting by elevated transverse bars; $6\frac{3}{4}$ by $3\frac{1}{2}$. No. 149, plain, long, and narrow, unsymmetrical, hammered at small extremity, slightly elevated at edges opposite rudimental stop, $5\frac{3}{4}$ by $2\frac{3}{4}$. The number of celts in which the small extremity has been blunted and hammered, without the cutting face being injured, leads one to believe that they were used like mortice chisels for cutting wood. No. 150, a good specimen, of bright yellow bronze, somewhat triangular, flat on the surface, and rudely decorated by hammered fan-tailed ornament radiating towards the blade, edge very sharp; $5\frac{3}{8}$ by $3\frac{1}{8}$; found in bed of the river at Ballyheedy Bridge, below Ballinamore, townland of Ardrum, parish of Oughteragh, county of Leitrim, and—*Presented by the Board of Works*. No. 151, a good specimen, in fair preservation, flat, long and narrow, plain; $5\frac{1}{8}$ by $2\frac{1}{2}$. No. 152, small, lunette-edged, $2\frac{1}{2}$ by $1\frac{3}{4}$. No. 153, long and narrow, imperfect in blade, slightly elevated at side edges, partially covered with remains of brown patina; $5\frac{1}{2}$ by $2\frac{1}{4}$. No. 154, lunette-edged, rudimental flange and stop, slightly corroded, decorated with slight cast cross ridges; $5\frac{3}{4}$ by $2\frac{1}{8}$. No. 155, rude in shape, narrow, slightly decorated below rudimental stop, and also on edges; $4\frac{3}{8}$ by 2. No. 156, rude, plain, flat; $4\frac{1}{2}$ by 2. No. 157, ditto; $4\frac{1}{4}$ by $2\frac{1}{8}$.—*Presented by Lord Farnham*. No. 158, ditto, imperfect from hammering on small extremity, blunt at cutting edge, slightly decorated with punched or hammered indentations on middle of flat surface; $4\frac{3}{4}$ by $1\frac{1}{8}$. No. 159, plain, flat, of a bright yellow colour, slightly decorated below rudimental stop with interrupted punched lines, $4\frac{3}{8}$ by $2\frac{1}{8}$; resembles No. 150.—*Presented by Lord Farnham*. No. 160, rude, corroded, saddler's knife-shaped blade, slight flanges and stop ridges; $4\frac{1}{8}$ by $2\frac{1}{8}$. No. 161, plain, flat, in shape and colour resembling No. 150, indented on side apparently from defect in cast-

ing; traces of hammered decoration; blunt on edge; $4\frac{7}{8}$ by $2\frac{3}{8}$. No. 162, rude, short, broad side edges raised into flanges, which turn over the small extremity, round in the cutting face; $4\frac{1}{8}$ by $2\frac{1}{4}$. No. 163, a good specimen, lunette-edged, with slight, sharp flanges; has a well-defined ornament on upper and lower edge; $5\frac{1}{4}$ by $2\frac{7}{8}$ (Dawson). No. 164, flat, lunette-edged, remarkably unsymmetrical towards small end; about a third of the middle decorated with a punch or hammer; $4\frac{1}{4}$ by $2\frac{1}{2}$. No. 165, lunette-edged; gapped in the face; slight flanges, decorated with curved cast ridges, and oblique tooled indentations; $4\frac{1}{2}$ by $2\frac{1}{2}$ (Dawson). No. 166, lunette-edged; appears to have been ground or sharpened, the extremities of the blades rounded off, remarkably sharp, rudimental stop and flange; $5\frac{1}{4}$ by $3\frac{1}{8}$. No. 167, saddler's knife-shaped blade, slight stop and flanges; $4\frac{7}{8}$ by $2\frac{3}{4}$ —*Presented by the executors of Leslie Ogilby, Esq.* No. 168, a good specimen, covered with a dark-brown patina, lunette-edged; $4\frac{1}{4}$ by $2\frac{1}{2}$ (Dawson). No. 169, narrow, recurved cutting face, blunted edge, slightly corroded, and also injured by hammering, decorated in casting like Fig. 294, in the illustrations of decoration, page 390; $4\frac{1}{8}$ by $2\frac{1}{8}$. No. 170, rude, narrow, long; much injured in face; rudimental stops and flanges; $5\frac{1}{2}$ by $2\frac{1}{2}$. No. 171, rude, unsymmetrical, unusual shape, long, narrow, lunette-edged, hammered at small extremity; 5 by $2\frac{1}{2}$. No. 172, small, narrow, lunette-edged, partially covered with brown patina; $3\frac{7}{8}$ by 2. No. 173, narrow, lunette recurved edge, slight flanges; $4\frac{1}{8}$ by $2\frac{1}{8}$.

SHELF I., *Tray I.*, contains thirty-two bronze celts, chiefly of the long, narrow variety, with wings, rudimental stops, lunette and fan-tail edges, some decorated; numbered from 174 to 205. No. 174, small, narrow, in good preservation, slight flanges, no stop; $3\frac{7}{8}$ inches long by 2 across the width of the blade. No. 175, a very perfect specimen of the plain winged, chisel-edged celt, without a stop; $4\frac{7}{8}$ by $1\frac{3}{4}$; figured and described at p. 373. No. 176, a slightly imperfect specimen of the same variety, wings well developed, no stop; $4\frac{1}{2}$ by $1\frac{3}{4}$. No. 177, lunette-edged, winged, of bright-yellow metal, thick, has a very small rudimental stop, which could scarcely have been of any use in effecting the object of that portion of the implement; $5\frac{1}{4}$ by $2\frac{3}{4}$, and an inch wide across the broadest part of the wing. No. 178, very narrow, rude, slightly imperfect, with wings

and stop, sides nearly parallel; $4\frac{1}{2}$ by $1\frac{1}{4}$. No. 179, chisel-edged, with wing and stop, slightly corroded, has a cast semicircular ornament below stop, and transverse ridges on the side; $5\frac{3}{4}$ by $2\frac{1}{2}$; found in the Bog of Aghavalid, county of Cavan, and—*Presented by Lord Farnham*. No. 180, thick, massive, much worn and battered, as if it had been long used as a tool; blunted on all the edges; of bright-yellow metal; $5\frac{1}{4}$ by $2\frac{1}{2}$. No. 181, fan-shaped, slightly imperfect in blade, very narrow in shaft, slight flange and stop; cast ornament, consisting of a semicircular ridge above cutting edge, and rope on side; 5 by $2\frac{1}{8}$. No. 182, chisel-edged, with stop and wings, the latter much hammered on their edges; $5\frac{3}{8}$ by $2\frac{3}{4}$.—*Presented by Lord Farnham*. No. 183, broad, chisel-edged, rudimental stop, well-developed wing, ornamented with a semicircular indentation below extremities of wings, and a grooved ridging on their sides; $5\frac{7}{8}$ by $2\frac{3}{8}$. The peculiarity of this remarkable celt consists in the circumstance of the wings springing out from the line of the side, as shown in the representation alluded to. No. 184 resembles the former in all respects, except the decoration upon sides of wings, chisel-edged, rudimental stop; $5\frac{5}{8}$ by $2\frac{1}{2}$. No. 185, short, rude, narrow, slight flanges and sunken, rudimental stops, slightly imperfect at both extremities; $4\frac{1}{2}$ by $1\frac{7}{8}$. No. 186, a fine specimen in good preservation, lunette-edged, wings well developed, stops small, curved edge remarkably sharp; $5\frac{5}{8}$ by $2\frac{7}{8}$; found in Keelogue ford, upon the Shannon, encrusted with a brownish substance, like some of the stone celts already referred to.—*Presented by Shannon Commissioners*. No. 187, broad-face, imperfect in blade, rudimental stop, wings well developed; $5\frac{5}{8}$ by $3\frac{1}{8}$. No. 188, chisel-edged, wings well developed, no stop. This is the reverse of No. 183, for, viewed in profile, the wings sink beneath the side edges; it is $5\frac{3}{8}$ by $2\frac{1}{8}$. No. 189, of greenish-yellow bronze, lunette-edged, with wings and stop; below the stop may be seen two lateral and one central grooved cast ornament; $5\frac{1}{8}$ by $2\frac{1}{8}$. No. 190, saddler's knife-edged, much worn, rudimental stop and flanges, remains of cast decoration still exist on blade, and in the groove below the small end may be seen traces of a punched pattern; $4\frac{1}{4}$ by $2\frac{1}{4}$; found in the parish of Rasharkin, county of Antrim. No. 191, small, semicircular-edged, corroded, slight flange, rudimental stop; $4\frac{1}{4}$ by $2\frac{1}{2}$ (Dawson). No. 192, small, perfect sad-

dler's knife-edged, with well-developed wing and stop; $3\frac{3}{8}$ by $2\frac{1}{8}$. No. 193, narrow, chisel-edged, imperfect at top, wing, and stop; now $4\frac{1}{2}$ by $1\frac{5}{8}$.—*Presented by Lord Farnham.* No. 194, very short, slight flange and stop, cutting edge appears to have been ground down to its present dimensions, decorated on flat and sides, the former with a chevron, the latter with a rope ornamentation; $3\frac{1}{2}$ by $1\frac{3}{4}$. No. 195, small, lunette-edged, with recurved points, slight flanges and rudimental stop; $3\frac{3}{4}$ by $2\frac{1}{8}$. No. 196, short, fan-shaped in blade, thick, with wings and slight stop; $4\frac{1}{8}$ by $2\frac{3}{4}$. No. 197, in good preservation, short, thick, very much recurved in the blade, winged; $4\frac{1}{8}$ by $2\frac{3}{4}$. No. 198, fan-shaped in blade, like Fig. 262, p. 373, short, thick, slight wing and stop, perfect, and in good preservation; $4\frac{1}{2}$ by 3. No. 199, long and narrow, lunette and recurved cutting edge, flange rudimentary, but stop rising above the level of the blade, highly ornamented over a large portion of the flat surface with straight-lined grooved indentations, like Nos. 140 and 627, and on the edge by an oblique roped ornament; $5\frac{1}{8}$ by $2\frac{7}{8}$. No. 200, a good specimen, fan-shaped in the blade, slightly imperfect in the edge, slight flange and stop; a hammered decoration covers all the surface of the side; 5 by 3.—*Presented by executors of Leslie Ogilby, Esq.* No. 201, a very fine specimen of the fan-shaped variety, worthy of illustration; slight wing, stop, and semicircular raised ornament at junction of the blade and shaft; beautifully engraved on surface below stop, and with a regular feather-like cast ornament on side, hammered at small extremity; $4\frac{3}{4}$ by $2\frac{7}{8}$. No. 202, thick, massive, lunette recurved edged, full wings, and stop; external surface of former has a cast ornament, slightly hammered at small extremity; $4\frac{7}{8}$ by $2\frac{3}{4}$. No. 203, a fine specimen of the fan-shaped celt, with a narrow shaft, slight wings, small oblique stop, and curved line at junction of shaft with blade, like Fig. 262; slightly corroded on surface; $5\frac{1}{8}$ by $3\frac{1}{2}$. No. 204, long, semilunar-edged, with wings and stop, cast decoration on sides, and flat surface; $5\frac{3}{4}$ by $3\frac{1}{8}$; Fig. 304, p. 371. No. 205, a good specimen, in fine preservation, of the fan-shaped variety, but differs from the others in having the stop curved, wanting the curved ridge on the blade, and in having a groove running along the side surface; $5\frac{1}{2}$ by $3\frac{1}{4}$.—*Presented by executors of Leslie Ogilby, Esq.*

SHELF I., Tray J, contains twenty-nine narrow celts, with stops

and wings; numbered from 206 to 234. No. 206, a good specimen, in fine preservation, short and fan-shaped, like Fig. 262, with a high stop; a rudely graven ornament covers the outer face of one wing; $4\frac{1}{2}$ inches long by $2\frac{1}{2}$ broad. No. 207, of same variety, but more recurved in blade, stop rises considerably above the level of the wings; slightly imperfect at small end; $4\frac{3}{8}$ by $2\frac{3}{4}$. No. 208, rude, narrow, thick, in bad preservation, stop rudimental; $4\frac{1}{2}$ by $1\frac{3}{4}$. No. 209, very perfect, broad wings, stop, lunette-edged, it is remarkable for a beautiful cast ornament on side edges of wings, being the first specimen of the kind met with in the Collection (see Fig. 271, p. 379); 5 by $2\frac{1}{4}$; found at Loughran's Island, on the Lower Bann.—*Presented by the Board of Works* (see Proceedings, vol. v., pp. 417). No. 210, rude, badly cast, narrow-winged, imperfect in several places; $5\frac{1}{2}$ by 2. No. 211, long and narrow, imperfect at top, 6 by $2\frac{1}{2}$. No. 212, narrow, straight-edged, slightly injured on one wing, ornamented below stop, of yellow bronze; $5\frac{1}{2}$ by $2\frac{3}{8}$; found in bed of Shannon, at Athlone.—*Presented by Shannon Commissioners*. No. 213, narrow, semicircular in blade, ornamented on both flat and side faces, the latter by a series of circular indentations, slightly hammered at top; 5 by $2\frac{1}{4}$; worthy of illustration. No. 214, rude, narrow, imperfect, rudimental stop, oblique ridge on outer side of wing; $5\frac{1}{8}$ by $1\frac{7}{8}$. No. 215, coppery, slightly imperfect in casting, cast ornament on flat surface; $4\frac{1}{2}$ by $2\frac{1}{2}$. No. 216, narrow, imperfect, chisel-edged, with holes on thin septum between wings; 5 by $1\frac{3}{4}$. No. 217, rude, narrow, imperfect; coppery, with possibly a very small alloy of tin; the wings and stop merge into each other, has all the appearance of great antiquity; $3\frac{3}{4}$ by $1\frac{1}{2}$.—*Presented by Lord Farnham*. No. 218, another specimen of the same kind, also of very red metal, slightly corroded; 4 by $1\frac{1}{2}$.—*Presented, with No. 219, by W. R. Wilde, Esq.* (see Proceedings, vol. iii., p. 539). No. 219, ditto, rude and narrow, of yellower metal than the two former; $4\frac{1}{2}$ by $1\frac{1}{2}$. No. 220, rude, small, narrow, corroded; $4\frac{1}{2}$ by $1\frac{3}{4}$. These four celts, which are all of reddish metal, would appear to be the link between the simple, copper, wedge-shaped celt, and the long, narrow, bronze variety, with stop. No. 221, rude, narrow, imperfect at top, lower surface on a level with stop, and presenting a slight ornamental projection; 4 by $1\frac{3}{8}$; from Lisgarvel, parish of Maghesa, county of Derry. No.

222, a tolerably good specimen, long in the wings, slight oblique stop, lunette-edged; $4\frac{1}{4}$ by $2\frac{1}{4}$. No. 223, short, lunette-edged, with long and broad wings, slightly ornamented in casting, hammered at top; $4\frac{5}{8}$ by $2\frac{1}{4}$. No. 224, imperfect, very remarkable from wings coming down to margin of cutting edge, slight narrow stop; $4\frac{1}{4}$ by $2\frac{1}{4}$. No. 225, short, chisel-edged, with cast ornament on face, stop separate from wings, slightly hammered at top, outer side of wings ornate, and raised into ridges, as if for limiting the play of the tying; $4\frac{3}{4}$ by $2\frac{1}{4}$ (see Fig. 272, p. 379). No. 226, perfect, with recurved points to cutting edge; stop, wings and slight projection on outer sides of latter; $5\frac{1}{2}$ by $2\frac{5}{8}$ (Dawson). No. 227, long and narrow, with wings and stop, slightly hammered at top; $5\frac{1}{2}$ by $2\frac{3}{4}$. No. 228, round edged, with high wings passing below stop; $5\frac{3}{4}$ by $2\frac{1}{4}$. No. 229, very perfect, long, narrow, resembling No. 226 in elevation on outer edge; $5\frac{3}{4}$ by $2\frac{1}{4}$. No. 230, long narrow, broad-edged, much corroded; 6 by $2\frac{3}{4}$.—*Presented by Lord Farnham*. No. 231, large, broad, hatchet face, well developed stop, with a cast and tooled ornament below it, remains of patina on some portions, but corroded towards the edge; 7 by 3. No. 282, imperfect, chisel-edged, corroded, very broad in the groove, slight cast ornament below narrow stop; $6\frac{1}{4}$ by $2\frac{7}{8}$. No. 233, perfect, long, narrow, round in cutting edge, with recurved points, long in the groove cast ornament below stop; $6\frac{1}{2}$ by $2\frac{1}{2}$; found in the bed of the river above Bunnamukagh Bridge, parish of Cloonfinlough, county of Roscommon, in 1849, and—*Presented by the Board of Works* (see Proceedings, vol. v., App., p. 62). No. 234, short-winged, slightly imperfect, broad in the side, high stop with slight raised ornament below it, semilunar edge with recurved points; $5\frac{3}{4}$ by $2\frac{3}{4}$.—*Presented by the executors of Leslie Ogilby, Esq.*

SHELF II., *Tray K*, contains twenty-five long and narrow celts, with stops and wings; numbered from 235 to 259. No. 235, a long palstave, with lunette and recurved cutting edge, broad in wing, decorated in casting below stop; $6\frac{3}{8}$ inches long by 3 across the blade, and $1\frac{3}{4}$ wide on side of wing. No. 236, perfect, broad in the face, and wide in the wing; $6\frac{1}{2}$ by 3 in cutting edge, and $1\frac{1}{2}$ across side of wing. In this and Nos. 235, 237, 239, and 247, there is a slight projection on the side like No. 248, Fig. 260, p. 373. No. 237, large, of same variety, decorated below stop; 7 by $2\frac{7}{8}$, and

$1\frac{1}{2}$ across wing. No. 238, hatchet-faced, imperfect in wing, narrow groove and stop; surface much affected by exposure; $6\frac{7}{8}$ by $2\frac{7}{8}$. No. 239, slightly imperfect, much battered on surface, shallow groove, curved ornament below stop; $6\frac{1}{2}$ by $2\frac{3}{4}$ (from Major Sirr's collection). No. 240, chisel-edged, very broad in the wing; this is the first specimen in which the lower portions of the wings are made by hammering to overlap the stop and socket; 6 by $2\frac{3}{4}$, and $1\frac{1}{2}$ across breadth of wing (from the Dawson collection). No. 241, straight-edged, broadest part of wing below slight shallow stop; 6 by $2\frac{3}{4}$. No. 242, massive, slightly imperfect in one wing, hatchet face, stop and wing well developed; 6 by $2\frac{3}{4}$. No. 243, lunette edge, imperfect at small end, curved raised cast ornament below stop; $5\frac{1}{2}$ by $2\frac{7}{8}$ (Dawson). No. 244, narrow, chisel edged, hammered at top, high stop with slight ornament beneath it; $6\frac{1}{4}$ by $2\frac{1}{2}$ (Dawson). No. 245, hatchet-face, unsymmetrical, very narrow wings and thin septum; 6 by $3\frac{1}{4}$. No. 246, the most perfect and largest specimen of this variety in the Collection, chisel-edged, ornamented below stop with bow-like cast decoration, below which is a line of circular indentations; $7\frac{1}{2}$ by 3, and $1\frac{1}{2}$ across side of wings. No. 247, a new sub-variety of the long, narrow celt, with wings and stop running into each other, broad in the cutting edge, slightly hammered at top, mould-mark on edges; $6\frac{1}{4}$ by $2\frac{7}{8}$. No. 248, the broadest winged celt in the Collection, lunette-edged, slight stop, with shallow curved ornament below, oblique raised bar on side; $5\frac{3}{4}$ by $2\frac{3}{4}$, and $1\frac{3}{4}$ across breadth of wing (see Fig. 250, p. 373). No. 249, narrow, small, lunette edge, wings turned into stop, like No. 247, showing one of the first indications of side socket, slightly hammered at top, mould-marks on side; $5\frac{3}{8}$ by 2. No. 250, short, fine close-grained metal, much hammered at top of wings, well developed cast ornament below stop; very sharp lunette edge; the moulds do not appear to have met closely, and have left a projecting ridge on side face; $4\frac{3}{4}$ by $2\frac{1}{2}$. No. 251, slightly imperfect, lunette edge; $5\frac{1}{2}$ by $2\frac{1}{4}$ (Dawson). No. 252, rude, but with well-developed socket-pouch, where wings and stop coalesce; slight projection on one side of cast line like a rudimental loop; $4\frac{3}{4}$ by $2\frac{1}{8}$. No. 253, lunette edged, imperfect in septum, broad wings, hammered over stop; $4\frac{7}{8}$ by $2\frac{1}{8}$. No. 254, of very red metal, rude, massive, much hammered at top, wings running down to chisel edge; $5\frac{1}{4}$ by $2\frac{1}{2}$; found in

Foulksrath, county of Kilkenny (Dawson). No. 255, chisel edge, hammered at top, wings turned in over stop, straight decoration on flat surface; $5\frac{1}{4}$ by $2\frac{1}{2}$.—*Presented by Lord Farnham*. No. 256, narrow, chisel edge, wings bent over stop; the slight flanges run down to cutting edge; $5\frac{3}{8}$ by $2\frac{1}{4}$ (Sirr). No. 257, narrow, chisel edge, stop and wings merge in casting, slightly imperfect at top; $5\frac{3}{4}$ by $2\frac{1}{8}$. No. 258, broad faced, with curved points, small stop with wings hammered over it, straight raised ornament below; $5\frac{1}{4}$ by $2\frac{1}{4}$.—*Presented by Lord Farnham*. No. 259, lunette-edged, wings broad and hammered over stop; $5\frac{3}{4}$ by $2\frac{1}{2}$.

SHELF II., *Tray L*, contains twenty-eight narrow celts, with stops and wings, several imperfect; numbered from 260 to 287. No. 260, a rude specimen, with shallow wings, and high cast ridge below stop; $4\frac{3}{8}$ inches long by $1\frac{3}{4}$ across the blade. No. 261, a short specimen, with straight blunt edge, bow ornament below stop, septum defective at top, as if the celt makers had begun to economize the metal in this portion; $4\frac{1}{2}$ by 2. No. 262, imperfect, stop rising to level of wing, unsymmetrical on edge, 5 by 2 (Dawson). No. 263, chisel-edged, hammered at top, raised triangular ridge below stop; $4\frac{7}{8}$ by $2\frac{1}{8}$. No. 264, imperfect in casting at small extremity, broad chisel edge, side mould-marks, triangular raised ornament below stop; $4\frac{3}{8}$ by $2\frac{1}{2}$; found in cutting through shoal on River Comoge, near Fedamore, between Glennogra and Sixmilebridge, county of Clare (see *Proceedings*, vol. v., App., p. 65). No. 265, narrow, semilunar-edged, wings and stop join to form pouch; defective in casting at top; $4\frac{7}{8}$ by $1\frac{7}{8}$; found in county of Kilkenny. No. 266, lunette recurved edge, defective in casting at top; stop rises up over wings, and forms partial socket; $4\frac{3}{4}$ by $2\frac{1}{8}$. No. 267, lunette recurved edge; stop rises over wings; $4\frac{3}{8}$ by $2\frac{1}{8}$. No. 268, slightly corroded, lunette edge, with recurved points, broad wings, defective at top, raised ornament below stop; 5 by $2\frac{1}{2}$. No. 269, a good, clean specimen, but perfectly plain, lunette-edged; 5 by $2\frac{1}{4}$. No. 270, imperfect at top, and in bad preservation, lunette-edged, broad curved ornament below stop; $4\frac{1}{2}$ by $2\frac{1}{8}$ (Sirr). No. 271, broad edge, like No. 247, high stop, with wings hammered over it; $5\frac{1}{4}$ by $2\frac{1}{2}$ (Dawson). No. 272, lunette-edged, broad-winged; 5 by $2\frac{1}{4}$ (Sirr). No. 273, short, broad-edged, wings turned over stop, straight ornament on flat surface; $3\frac{3}{4}$ by $2\frac{3}{8}$; found in bed of river

at Killimor, barony of Longford, county of Galway.—*Presented by Board of Works.* No. 274, an imperfect but remarkable specimen, in which the side socket is partially developed, the wings and stop running into each other; septum imperfect; long, narrow blade, semilunar cutting edge; apparently very ancient, and formed of red metal; $5\frac{3}{4}$ by $2\frac{1}{4}$. No. 275, rude, narrow, imperfect at top, partial socket between wings and stop; raised ornament below, slight flanges running into narrow cutting edge; $4\frac{3}{8}$ by $1\frac{3}{4}$. No. 276, the most perfect specimen of the partial socket; see Fig. 263, p. 377; slightly imperfect at both extremities, lunette edge, wings and stop coalesce to form side socket; $5\frac{1}{8}$ by $2\frac{3}{8}$. No. 277, narrow, much injured, wings descend below stop; $5\frac{1}{4}$ by $2\frac{1}{8}$. No. 278, narrow, blunt-edged, no raised stop but wings hammered over groove; $5\frac{1}{4}$ by 2. No. 279, defective, semilunar-edged; $4\frac{3}{8}$ by $2\frac{1}{4}$. No. 280, defective, corroded, narrow, chisel edge; $5\frac{1}{2}$ by 2. No. 281, hatchet-faced, with a wind in side of blade, hammered at top, groove narrow; $5\frac{1}{8}$ by $2\frac{1}{2}$. No. 282, narrow, imperfect, shallow groove, wing and socket coalesce, of very red metal; $5\frac{1}{8}$ by $1\frac{1}{2}$. No. 283, imperfect, rude, thin septum, $4\frac{1}{2}$ by 2. No. 284, small, hatchet-faced, with partial socket, and straight ornament on front; $4\frac{3}{8}$ by $2\frac{1}{8}$ (Dawson). No. 285, imperfect, lunette edge, raised ornament; $5\frac{1}{2}$ by $2\frac{3}{8}$. No. 286, a bad casting, unsymmetrical, imperfect at top, semilunar edge, ridge left in moulding apparent on one side; 5 by $2\frac{1}{2}$ (Dawson). No. 287, narrow, defective at top, round edge, wings and stop very small; $5\frac{1}{2}$ by 2 (Sirr).

SHELF II., *Tray M*, contains fifty-one small, narrow celts, with well-developed stops and wings; and numbered from 288 to 338. No. 288, hatchet-faced; $4\frac{3}{8}$ inches long by $2\frac{1}{4}$ broad (Dawson). No. 289, ditto, imperfect at top, with pouch-shaped stop; $4\frac{3}{4}$ by 2. No. 290, perfect, lunette-edged; $4\frac{1}{4}$ by $2\frac{3}{8}$ (Dawson). No. 291, imperfect, badly cast, semilunar edge, slight shallow wings and stop; $4\frac{3}{4}$ by $2\frac{1}{4}$. No. 292, imperfect, rude, blunt at edge, slightly ornamented below rudimental stop; $4\frac{3}{4}$ by $1\frac{3}{4}$. No. 293, rude, massive, blunt on semilunar edge, high stop, raised, curved ornament below it; $5\frac{1}{8}$ by $2\frac{3}{8}$. No. 294, chisel edge, deep groove between broad wings, thin septum, imperfect at top; $4\frac{5}{8}$ by 2. No. 295, narrow, round-edged, imperfect in wings; $4\frac{1}{2}$ by $1\frac{3}{8}$. No. 296, lunette edge, slightly imperfect at top, cast-mark shows that the sides of mould did not match; $4\frac{1}{4}$ by 2 (Dawson). No. 297, rude, massive, as if

badly cast in a rude mould, septum imperfect at top; $4\frac{3}{8}$ by $2\frac{1}{4}$. No. 298, narrow, chisel-edged, broad in the wings, which with stop form side socket; $4\frac{1}{2}$ by $1\frac{3}{4}$; found in county of Tipperary. No. 299, much injured, lunette edge, $4\frac{1}{4}$ by 2. No. 300, a good specimen, lunette-edged with recurved points, side sockets formed with wings and stop; $4\frac{3}{4}$ by $2\frac{3}{8}$. No. 301, short, sharp hatchet-edge, imperfect at top, slight side socket; $3\frac{7}{8}$ by $2\frac{1}{8}$. No. 302, imperfect at small extremity, bears marks of sharpening on hatchet face; 4 by $2\frac{3}{8}$ (Sirr). No. 303, rude and imperfect in casting, lunette and recurved edge; $3\frac{5}{8}$ by $1\frac{7}{8}$.—*Presented by executors of Leslie Ogilby, Esq.* No. 304, lunette edge, with slight side socket; $4\frac{5}{8}$ by 2. No. 305, rude, massive, badly cast, much hammered at top, as if from long use as a chisel; 4 by 2. No. 306, a bad, lumpy casting, lunette edge, with side sockets; $3\frac{3}{4}$ by $2\frac{1}{8}$ (Dawson). No. 307, rude, imperfectly cast, corroded, slight side sockets; $3\frac{7}{8}$ by $1\frac{3}{4}$ (Dawson). No. 308, imperfect, lunette-edged, much hammered at top; $3\frac{3}{8}$ by $1\frac{7}{8}$. No. 309, lunette edge, imperfect at top; $2\frac{3}{8}$ by $2\frac{1}{8}$. No. 310, lunette-edged, with much recurved points, hammered at top, side sockets, ornamental ridge below stop. No. 311, narrow, rude, imperfect, corroded, semilunar-edged; $3\frac{1}{2}$ by $1\frac{1}{2}$.—*Presented by executors of Leslie Ogilby, Esq.* No. 312, of bright yellow metal, rude, slightly imperfect, semilunar edge, wings and stop coalesce; $3\frac{1}{2}$ by $1\frac{3}{8}$. No. 313, narrow, imperfect at top, chisel edge, raised, bow ornament below rudimental stop; $4\frac{1}{8}$ by $1\frac{1}{2}$; found in the parish of Rasharkin, county of Antrim. No. 314, perfect, lunette edge, wings bent over stop, raised ornament; $3\frac{7}{8}$ by $2\frac{1}{8}$ —"found 3 feet under surface, in excavating Toome bar, the ancient ford on the River Bann, between the counties of Derry and Antrim, and near Toome Castle, on the Antrim side."—*Presented by Board of Works.* No. 315, rude, chisel-edged, imperfect at top from defective casting, wings bent over slight stop. The turn-in of the wings, in this as well as the next specimen, was evidently effected in the mould; $3\frac{5}{8}$ by $1\frac{3}{8}$. No. 316, curved, and symmetrical in edge, wings turned over, slight stop; $3\frac{1}{2}$ by $1\frac{3}{8}$. No. 317, lunette edge, recurved points, defective at top, a handsome raised ornament occupies surface below stop; $3\frac{3}{4}$ by $2\frac{1}{8}$. No. 318, rude, narrow, round-faced, with deep grooves; $3\frac{3}{4}$ by $1\frac{3}{8}$ (Dawson). No. 319, a remarkable specimen, in which the wings are but rudimentary, and the stops much developed, lu-

nette-edged; $3\frac{1}{2}$ by $1\frac{7}{8}$ (Dawson). No. 320, rude, narrow, in bad preservation, round edge, hammered at top; $3\frac{5}{8}$ by $1\frac{5}{8}$ (Dawson). No. 321, imperfect at top, shallow stop, lunette edge, apparently ground; $3\frac{7}{8}$ by 2 (Dawson). No. 322, very rude, narrow, round edge, imperfect at top, side sockets; $3\frac{1}{4}$ by $1\frac{1}{2}$. No. 323, rude, narrow, chisel edge, imperfect, corroded, $3\frac{1}{4}$ by $1\frac{3}{4}$ (Dawson). No. 324, very short, lunette edge, much hammered at top; $2\frac{9}{8}$ by $1\frac{5}{8}$. No. 325, narrow, chisel edge, very broad in wing, deep side sockets, slightly ornamented below stop; $3\frac{3}{8}$ by $1\frac{3}{8}$, and $1\frac{1}{4}$ across width of wing. From county Kilkenny. No. 326, narrow, chisel-edged, deep side sockets, $3\frac{1}{8}$ by $1\frac{3}{8}$ (Dawson). No. 327, lunette edge, imperfect, with wings and stop; 3 by $1\frac{1}{2}$. No. 328, rude, narrow, blunt, chisel edge, side sockets; $2\frac{3}{8}$ by $1\frac{3}{8}$ (Dawson). No. 329, short, broad, lunette edge; wings turned over groove, cast bow ornament below; $3\frac{1}{8}$ by $1\frac{7}{8}$. No. 330, very rude, small, round-edged, wings and stop coalescing; $2\frac{3}{4}$ by 1 (Dawson). No. 331, small, hatchet face, imperfect in casting at top, slightly ornamented; $2\frac{3}{4}$ by $1\frac{1}{4}$. No. 332, lunette edge, narrow in the face, but broad in wings, slight cast ornament below stop; $2\frac{7}{8}$ by $1\frac{1}{4}$. No. 333, a curious and small specimen of this variety; chisel edge bearing marks of sharpening, with a stone, narrow groove, sharp-edged wings, unsymmetrical; $2\frac{3}{4}$ by $1\frac{1}{4}$. No. 334, rude, badly cast, lunette recurved edge, defective in top and wings, ornamented below stop; $2\frac{7}{8}$ by $1\frac{3}{4}$ (Sirr). No. 335, imperfect, chisel edge, side sockets; 3 by $1\frac{1}{4}$. No. 336, very small, semilunar edge, deep side sockets, imperfect at top; $2\frac{1}{2}$ by $1\frac{3}{8}$. No. 337, chisel edge, imperfect at top; $2\frac{7}{8}$ by $1\frac{1}{2}$.—*Presented by W. R. Wilde, Esq.* No. 338, very short and broad, round-faced, blunt, corroded, side sockets; $2\frac{3}{4}$ by $1\frac{3}{8}$ (Dawson).

There is scarcely a good perfect specimen on this Tray, and, from the number of imperfections in casting, they present, as a whole, all the appearance of specimens which might have been collected in the workshop of a celt-maker. They also strengthen the argument advanced for the ancient manufacture of all such articles in Ireland.

SHELF II., *Tray N*, contains eighteen long, narrow celts, with wings, stops, and loops; numbered from 339 to 356. No. 339, imperfect at top, chisel edge, hammered at small extremity, well-developed side sockets, loop imperfect; $4\frac{1}{8}$ inches long by $1\frac{7}{8}$ wide.

No. 340, narrow, with lunette but imperfect edge, apparently sharpened; shallow grooves and side sockets, loop perfect, ornamented with raised central bar and curved ridge on flat surface below stop; $5\frac{1}{4}$ by 2, see Fig. 306 (Dawson). No. 341, very imperfect, narrow, round-faced, without stop, septum rising above wings, loop fractured, slight marks of hammering upon top, so that, although it may never have been used with a handle, it was evidently employed as a chisel; $4\frac{1}{8}$ by $1\frac{3}{8}$. No. 342, broad, chisel edge, slightly corroded, wings shallow, but turned in over groove below, apparently in casting, loop perfect; $4\frac{3}{4}$ by $2\frac{1}{8}$; Fig. 265, p. 379. No. 343, slightly imperfect in septum, lunette-faced, with recurved points, ground on cutting edge, side sockets formed by turning in the lower extremities of the wings to meet a raised stud at their angles, loop perfect and high on socket; 4 by $2\frac{3}{8}$. No. 344, rather chisel-edged, corroded, deep side sockets projecting into ornaments, loop opposite sockets; $4\frac{7}{8}$ by $2\frac{1}{8}$ (Dawson). No. 345, lunette edge, notched at smaller extremity, deep side sockets, sides do not correspond, owing to moulds not meeting perfectly; $5\frac{3}{8}$ by $2\frac{1}{8}$.—*Presented by Shannon Commissioners.* No. 346, narrow in the shaft, and broad in curved cutting edge, shallow grooves, with slight side sockets, ornamented on the face like No. 340; large perfect loop; $6\frac{1}{4}$ by $2\frac{1}{2}$. "Taken out of bed of Shannon by C dredge." No. 347, large, perfect, but unsymmetrical from moulds not meeting fairly above; the great object being evidently to produce a good cutting edge, which is always perfect, while the upper portion did not receive so much attention in the casting. Long in the blade, side sockets, loop perfect, slight triangular ornament on face; $6\frac{1}{2}$ by 3. No. 348, small, imperfect at wings and top, semilunar edge, side sockets, loop worn on inner side; $3\frac{5}{8}$ by $2\frac{3}{8}$; found at Shannon-Bridge, and—*Presented by Shannon Commissioners.* No. 349, rude, imperfect at top, circular side sockets, semilunar edge, wide loop placed opposite sockets; 5 by $1\frac{7}{8}$, found at Keelogue Ford, and—*Presented by Shannon Commissioners.* No. 350, short, semilunar-edged, lower end of wings turned in over slight stop; $3\frac{1}{2}$ by 2 (like Figure 256, p. 379). No. 351, lunette edge, hammered at top, deep side sockets, loop; $5\frac{1}{2}$ by $2\frac{1}{2}$. No. 352, narrow in the shaft and broad in the hatchet face, wings and stop coalesce, raised side ornament, small loop; 6 by $2\frac{3}{4}$. No. 353, a good specimen, graceful in shape, lunette edge, with

much-recurved points, groove shallow at top, side face pleasingly decorated by a central ridge, and elevated side edges, loop perfect, circular apertures in hollows of sockets; $6\frac{3}{8}$ by $2\frac{7}{8}$ across blade, and $\frac{7}{8}$ ths at small extremity. No. 354, same variety, but not so good a cast, and wanting recurved points, massive loop, opposite shallow stop, a slight cast ornament on the face; $6\frac{3}{4}$ by $2\frac{3}{4}$.—*Presented by Shannon Commissioners.* No. 355, rather a rare form of this variety, massive, thick, unornamented, semilunar-edged, with deep sockets and elliptical broad stop, oblique at small extremity; $5\frac{1}{2}$ by $2\frac{1}{2}$. No. 356, same variety as No. 352, corroded, broad, hatchet face, ornamented like No. 340, shallow groove, loop perfect; $6\frac{1}{8}$ by $2\frac{3}{4}$; found in the county of Galway.

SHELF III., *Tray O*, contains thirty-five socketed and looped celts, some ornamented, numbered from 357 to 391. The socketed celts commence here, and end with No. 569, on *Tray S*. No. 357, a plain, rude, unornamented, socketed celt, rather chisel-edged, oval in socket; $3\frac{1}{8}$ inches long, $1\frac{7}{8}$ broad in cutting edge, and 2 across the long diameter of the oval socket, which is $2\frac{1}{2}$ deep, so that the solid portion is about $\frac{7}{8}$ ths of an inch; loop thin, but perfect (Dawson). No. 358, a much injured and corroded specimen of the wedge-shaped socketed celt, originally quadrangular in the socket, and slightly ornamented in the rim; loop perfect; $4\frac{7}{8}$ by $1\frac{5}{8}$. No. 359, imperfect on cutting edge, loop socket oval, with slightly raised margin, having a hole on one side, as if for insertion of a rivet, the only example of the kind in the Collection; the antiquity of this aperture is, however, questionable. It is now $2\frac{1}{2}$ by $1\frac{1}{2}$. On looking through this specimen, may be seen at the bottom the septum or slight ridge which marked the joining of the double core used in casting. No. 360, short, round-faced, with a raised ornament below socket margin; loop perfect; $2\frac{1}{2}$ by $1\frac{3}{4}$. No. 361, gold-coloured, round-edged, raised bar or fillet above large perfect loop, socket circular; $1\frac{3}{4}$ by $1\frac{1}{8}$ in blade; and $1\frac{1}{8}$ across outer edge of socket.—*Presented by R. A. Gray, C. E.* (see *Proceedings*, vol. v., App., p. 56). No. 362, of bright yellow metal, in good preservation, broad fillet, loop, socket oval, and having three ridges running down its interior, the marks of the three-pieced core; $2\frac{3}{4}$ by $1\frac{3}{4}$; “found 4 feet below the old bed of the Woodford River, townland of Cormeen, county of Cavan,” and—*Presented*

by Board of Works. No. 363, of bright yellow metal, semilunar edge, broad fillet round edge of oval socket; loop; $2\frac{3}{4}$ by 2.—*Presented by Lord Farnham.* No. 364, long, semilunar-edged, circular socket margined by a ridge overlapping a broad groove, which surrounds that part above a thick broad loop; $3\frac{1}{2}$ long by $2\frac{1}{2}$ broad, and $1\frac{1}{2}$ ths from out to out of socket, which is $2\frac{1}{8}$ deep (Dawson). No. 365, perfectly plain, slightly corroded, very thin, hatchet face, an imperfection in casting like a rivet-hole at edge of circular socket; loop remarkably slight; $2\frac{1}{8}$ by $2\frac{3}{8}$. No. 366, rather square, chisel-edged, oblique at top, apparently from bad casting, loop perfect, no remains of core marks in socket, but a circular grooved line surrounds the interior; a different form of casting was evidently used with this specimen; 3 by $1\frac{3}{4}$. No. 367, short, saddler's knife-edged, nearly circular in socket, loop, and top fillet; $2\frac{3}{4}$ by $2\frac{1}{4}$ (Dawson). No. 368, short, round-edged, oval in socket, a double fillet runs above perfect loop; $2\frac{3}{4}$ by $1\frac{1}{2}$ (Dawson). This specimen is covered with a fine, clean patina, or varnish. No. 369, short, hatchet-faced, plain, mould-marks on edge, oval in socket, three core lines, loop small; $2\frac{1}{2}$ by $2\frac{3}{8}$ (Dawson). No. 370, lunette-edged, plain, oval in socket; $2\frac{3}{4}$ by $2\frac{1}{8}$. No. 371, long, imperfect, wanting loop and part of socket; hatchet-faced, plain, slightly corroded; $4\frac{1}{8}$ by $2\frac{3}{8}$. No. 372, in good preservation, round-edged, oval socket, a double fillet surrounds the margin, loop elliptical; $3\frac{1}{4}$ by $2\frac{3}{8}$. No. 373, plain, semilunar-edged, slightly corroded, loop perfect; $3\frac{1}{8}$ by $2\frac{3}{8}$. No. 374, of fine smooth metal, covered with a greenish patina, semilunar blunt edge; a rude, double fillet, as if made by hand, surrounds oval socket; loop strong; $3\frac{1}{8}$ by $2\frac{1}{4}$ (Dawson). No. 375, plain, long and narrow, corroded, elliptical in blade, and circular in thin socket, loop large and circular; $2\frac{3}{8}$ by $2\frac{1}{2}$. The socket has been hammered on one side, as if it had been used as a chisel, like the narrow-winged celts (Sirr). No. 376, in good preservation, semilunar edge, socket oval, deeply marked with core ridges, edge indented, loop high; $3\frac{1}{4}$ by $2\frac{3}{8}$ (Dawson). No. 377, round, blunt edge, socket circular, with broad fillet round it at upper insertion of thick heavy loop; $3\frac{1}{4}$ by $2\frac{1}{8}$ (Dawson). No. 378, plain, corroded, round edge, nearly circular in socket, loop perfect; $3\frac{3}{8}$ by $2\frac{1}{4}$ (Sirr). No. 379, round in the edge, and circular in the socket, with raised bar surrounding upper edge above thick loop, cast ornament; described

and figured at p. 392; a decoration formed in the mould surrounds the insertions of the loop, as if intended to be worked afterwards with a tool, but the castings had never been cleared off; $3\frac{1}{4}$ by $2\frac{1}{2}$. No. 380, a remarkable and rather rare specimen, lunette recurved edge, five-sided in shaft, massive edge and loop, indented below, oval everted socket margin; $3\frac{1}{4}$ by $2\frac{3}{8}$. No. 381, long, round-edged, flat above cutting edge, socket circular, raised fillet above strong loop, slightly corroded; $3\frac{1}{2}$ by $2\frac{1}{8}$. No. 382, of fine close-grained metal, like No. 374, semilunar edge, unornamented, loop perfect, socket slightly irregular; $3\frac{1}{4}$ by $2\frac{3}{8}$ (Dawson). No. 383, semilunar-edged, with sharp extremities, double fillet round circular socket, thick heavy loop; $3\frac{1}{4}$ by $2\frac{1}{2}$. No. 384, lunette-edged, a slight indentation surrounds oval socket, loop long and flat; 3 by $2\frac{3}{4}$. No. 385, hatchet face, plain, slightly corroded, loop imperfect, socket nearly circular; $3\frac{1}{2}$ by $2\frac{3}{4}$ (Dawson). No. 386, large, semilunar-edged, socket thinner on one side than another, slightly raised fillet, oval loop apparently worn on inner surface; $4\frac{1}{8}$ by $2\frac{3}{4}$, and $3\frac{1}{2}$ deep in socket. No. 387, a good specimen, semilunar face, oval socket, with raised lip, narrow loop; $3\frac{3}{4}$ by $2\frac{3}{4}$; procured from Killala, county of Mayo (Sirr). No. 388, much corroded, loop broken, semilunar edge; $3\frac{1}{2}$ by $2\frac{1}{2}$ (Sirr). No. 389, a good specimen, round and broad in the blade, oval in socket, loop large and perfect, fillet broad and slight; $3\frac{1}{2}$ by $2\frac{3}{4}$; found at Athlone, and—*Presented by Shannon Commissioners*. No. 390, smooth, unornamented, of fine close-grained metal, like Nos. 374 and 382, which it much resembles, and, like them, has an irregular margin to the oval socket; $3\frac{1}{2}$ by $2\frac{3}{8}$ (Dawson). No. 391, presents somewhat the same characters as the preceding, but a slight tooled indentation surrounds the irregular margin of the oval socket, loop perfect; $3\frac{3}{8}$ by $2\frac{3}{8}$.

SHELF III. *Tray P*, contains thirty-five socketed and looped celts, numbered from 392 to 426. No. 392, short, compressed, chisel-edged, oval socket, with slight raised fillet round the margin, loop large; $2\frac{3}{4}$ inches long, by $1\frac{1}{8}$ across the blade, and $\frac{3}{8}$ ths in the clear of the short axis of the socket. No. 393, short, lunette-edged, compressed, socket oval, loop round; $2\frac{1}{2}$ by 2. No. 394, lunette-edged, oval socket, with indented ornament, cast mark on side edge; $2\frac{3}{8}$ by $2\frac{1}{4}$ (Dawson). No. 395, compressed, lunette-edged, socket a long oval, with a slightly everted margin, loop heavy; $2\frac{1}{8}$ by $2\frac{3}{8}$.

No. 396, round edge, socket oval with imperfect margin, loop wide, and its insertions running off into sides of socket, raised ornamentation; triple core marking the ends of the ridges not meeting in the angle below, so that probably the core was composed of several pieces; $2\frac{3}{4}$ by $2\frac{1}{8}$.—*Presented by Lord Farnham.* No. 397, a good clean specimen, resembling the fan-shaped celt in the blade, plain, circular in socket, loop; 3 by $2\frac{1}{2}$. No. 398, long, chisel edge, circular in socket, with raised fillet below margin, broad low loop; $3\frac{1}{4}$ by $1\frac{3}{4}$. No. 399, long, recurved lunette edge, plain, oval socket, large perfect loop; $3\frac{1}{8}$ by $2\frac{1}{8}$ (Dawson). No. 400, thick and massive, narrow, semilunar edge, plain, oval socket, circular loop; 3 by 2 (Dawson). No. 401, long, compressed in middle, semilunar edge, fractured from defect in casting, oval socket, with large elliptical loop; $3\frac{1}{2}$ by $2\frac{1}{2}$; found near Dunshaughlin, and—*Presented by Lord Farnham.* No. 402, flat, angular on side edges, hatchet face, socket oval with raised margin, small loop; $3\frac{1}{2}$ by $2\frac{2}{3}$ (Dawson). No. 403, plain lunette edge, nearly circular in socket, wanting core marks, slight round loop; $3\frac{1}{8}$ by $2\frac{3}{8}$; from the county of Tipperary (Sirr). No. 404, lunette slightly recurved edge, undecorated, socket circular; 3 by $2\frac{1}{2}$ (Dawson). No. 405, flat and compressed, straight chisel edge, socket elliptical, with triple fillet below everted margin, loop placed high up; $3\frac{1}{4}$ by $2\frac{1}{4}$. No. 406, a fine specimen, broad, lunette recurved edge, plain, oval socket, loop large and sharp on inner edge; $3\frac{1}{2}$ by 3 (Sirr). No. 407, plain, brassy, hatchet edge, slightly oval in socket, loop massive, large core ridge; $3\frac{1}{2}$ by $2\frac{2}{3}$ (Dawson). No. 408, narrow in shaft, six-sided, hatchet-faced, undecorated, socket oval, in the bottom of which still remains an inch of the wooden handle, indented with the core ridges, showing that it was forced into its place (see p. 383); $3\frac{2}{3}$ by $2\frac{2}{3}$; “found in the River Erne, in loose stones and gravel, about two feet below the bed of the river, in townland of Bessbrook, parish of Annagh, barony of Lower Loughtee, and county of Cavan.” No. 409, plain, long, narrow in blade, lunette edge, socket circular, loop thin; $3\frac{1}{4}$ by $2\frac{1}{2}$.—*Presented by R. A. Gray, C. E.* No. 410, massive, broad hatchet face, oval socket with indented edge, loop small; $3\frac{2}{3}$ by $3\frac{1}{8}$.—*Presented by the executors of Leslie Ogilby, Esq.* No. 411, a fine specimen, in good preservation, semilunar edge, slightly oval socket with triple fillet below wide-spread margin, loop broad; $3\frac{1}{2}$ by $2\frac{2}{3}$ (Dawson). No.

412, plain, round chisel edge, oval socket with trumpet mouth (Sirr). No. 413, large, lunette edge, socket circular, with indented margin, loop small; $3\frac{3}{4}$ by $2\frac{7}{8}$.—*Presented by the Shannon Commissioners.* No. 414, rude, plain, slightly corroded, edge round, socket circular, loop wide and thin; $3\frac{3}{4}$ by $2\frac{1}{2}$ (Dawson). No. 415, broad, lunette edge with slight recurved points, socket circular, with raised rim below everted margin, loop small; $3\frac{3}{4}$ by 3. No. 416, fan-shaped edge, circular socket, compressed opposite large wide loop; a slight raised band, $3\frac{1}{4}$ wide surrounds the socket edge; $3\frac{3}{4}$ by $2\frac{7}{8}$. No. 417, perfect, fan-shaped edge, a raised band passes round circular socket opposite insertion of narrow loop; $4\frac{1}{8}$ by $2\frac{7}{8}$. No. 418, in bad preservation, round hatchet edge, socket circular, with three raised bands, loop defective; $3\frac{3}{4}$ by $2\frac{1}{2}$ (Sirr). No. 419, plain, broad, hatchet-face, massive loop, socket circular; $3\frac{3}{4}$ by 3. No. 420, plain, lunette edge, oval; $3\frac{3}{4}$ by $3\frac{1}{8}$ (Sirr). No. 421, unornamented, round face, socket circular, loop small; $3\frac{7}{8}$ by $2\frac{3}{4}$. No. 422, plain, semi-lunar edge, socket oval with oblique margin, loop high; $3\frac{3}{4}$ by $2\frac{3}{4}$ (Dawson). No. 423, long, massive, six-sided, round face, socket circular, eye of loop small; $4\frac{1}{2}$ by $2\frac{3}{4}$; "found in deepening the bed of the river in the townland of Derrindrehid, parish of Killesandra, barony of Tullyhunco, and county of Cavan."—*Presented by the Board of Works.* No. 424, massive, remains of patina on part of surface, lunette edge, circular socket, loop strong; $4\frac{1}{2}$ by $3\frac{1}{4}$. No. 425, of bright yellow metal, edge semilunar, socket circular, with broad fillet passing round margin; $4\frac{1}{8}$ by $2\frac{7}{8}$. No. 426, thin, defective in casting, round edge; $3\frac{3}{4}$ by 3 (Dawson).

SHELF III., Tray Q, contains forty-two socketed and looped celts, mostly long and narrow, some axe-shaped; numbered from 427 to 468. No. 427, short, round-faced, triple ornament, round socket, loop perfect; $2\frac{1}{4}$ inches long, by $1\frac{3}{4}$ wide in the blade—*Presented by the Shannon Commissioners.* No. 428, small, much corroded, hatchet-faced, covered with an incrustation like iron rust, loop circular; 2 by $2\frac{1}{4}$. No. 429, slender, lunette edge, recurved points, socket circular, unornamented, loop perfect; $2\frac{7}{8}$ by $1\frac{7}{8}$ (Dawson). No. 430, slender, hatchet-faced, socket circular, unornamented, loop perfect; 3 by $1\frac{3}{4}$ (Dawson). No. 431, imperfectly cast, lunette edge, plain, socket oval, loop slender, worn; $3\frac{3}{4}$ by $2\frac{1}{4}$. No. 432, plain, round edge, socket oval with indented margin, loop deficient; $3\frac{1}{8}$ by 2.

No. 433, long and slender, hatchet edge, ten-sided at top, socket circular with slight outer ornament, loop massive; 4 by $2\frac{1}{4}$. No. 434, large, plain, semilunar edge, socket quadrangular, loop broken; 4 by $2\frac{1}{4}$. No. 435, flattened, broad, lunette recurved edge, socket oval, with double fillet round outer margin, loop large; $3\frac{3}{8}$ by $2\frac{1}{4}$. No. 436, a fine specimen of the hatchet-faced variety of bronze celt, resembling in the blade some of the axes in the Iron Collection, especially No. 244, on Tray J, socket oval, loop massive; figured and described at page 385. No. 437, small, rude, corroded, chisel edge, quadrangular socket and shaft; no core-marks, as is common in this variety; $2\frac{1}{2}$ by $1\frac{3}{4}$: "found at Loughran's Island, on the Lower Bann," and—*Presented by the Board of Works*. No. 438, flattened accidentally, triple core-marks, semilunar edge, slender loop, decorated round socket and on side face, but ornament much effaced; $2\frac{1}{2}$ by $1\frac{7}{8}$. No. 439, a small specimen of the hatchet variety, thick, socket oval with marginal indentations, loop circular; $2\frac{5}{8}$ by $2\frac{1}{2}$. No. 440, thick, lunette edge, angular on sides, socket oval with indented margin, loop massive; $2\frac{3}{4}$ by $2\frac{1}{8}$. No. 441, slender, narrow in shaft, chisel edge, socket circular, with inner core-mark and raised band externally, loop small and placed high up; $3\frac{1}{4}$ by 2 (Dawson). No. 442, slender, semilunar edge, loop perfect, oval socket, raised fillet, sharp side angles, forming slight ornaments on both edge views; $3\frac{1}{2}$ by 2; found at Aughnacloy, county of Tyrone (Dawson). No. 443, perfectly plain, very thin, slender, chisel edge, oval socket with trumpet mouth, very small loop; $3\frac{1}{4}$ by 2 (Dawson). No. 444, slender, with roped ornament at top, figured and described at page 384, deficient on one lip of socket. No. 445, very perfect, broad, flat, chisel edge, socket a compressed oval with double moulding outside, loop large; $3\frac{3}{4}$ by $2\frac{1}{4}$; found in the Shannon, and—*Presented by the Shannon Commissioners*. No. 446, a fine specimen of the axe-shaped variety, like Fig. 281, page 385, octagon shaft, blade edge nearly straight, loop small, socket oval with large ridge externally, no vestige of core-mark; $3\frac{3}{4}$ by $3\frac{1}{4}$. No. 447, small, round edge; socket oval, with triple ornament externally; $2\frac{1}{4}$ by $1\frac{3}{8}$. No. 448, ditto; socket circular, with three bands below margin, large double core-marks; $2\frac{3}{8}$ by $1\frac{3}{4}$ (Sirr). No. 449, rude, plain, round in edge, circular in socket, loop slight and apparently worn; $2\frac{3}{4}$ by $1\frac{3}{4}$ (Dawson). No. 450, broad, semilunar edge, socket

oval, plain, loop narrow; $3\frac{1}{4}$ by $2\frac{3}{8}$. No. 451, slender, compressed, unornamented, six-sided in shaft, lunette edge, socket irregular, loop small and placed high up; $3\frac{1}{4}$ by $2\frac{1}{2}$ (Dawson). No. 452, of graceful shape and in fine preservation, except the loop, which has been broken, very round in the face; socket circular, and not quite an inch wide in the clear, with broad corded ornament on external surface; a fine patina or varnish covers the whole of this specimen; $3\frac{1}{2}$ by 2 (Dawson). No. 453, long, narrow, injured in socket, semilunar edge, loop small; found in the Bog of Allen, county of Kildare; $3\frac{3}{4}$ by $2\frac{1}{4}$. No. 454, small, lunette edge, socket circular, loop round; $2\frac{1}{8}$ by $1\frac{1}{2}$. No. 455, short, semilunar edge, quadrangular socket with everted margin over broad fillet, loop perfect; covered with an incrustation of iron (see page 394), has some Irish letters engraved upon it; $2\frac{1}{2}$ by $1\frac{7}{8}$. No. 456, short, round-edged, highly ornamented by five raised longitudinal bars running from the fillet below elliptical socket to cutting-edge; $2\frac{1}{4}$ by $1\frac{3}{4}$ (Dawson). No. 457, small, axe-shaped, slightly corroded, socket oval with everted edge, loop narrow; $1\frac{3}{4}$ by $1\frac{7}{8}$; no mark of core-mould. No. 458, small, narrow, lunette edge, socket circular, with trumpet opening, filleted; $2\frac{3}{8}$ by $1\frac{1}{2}$ (Dawson). No. 459, small, chisel-edged, socket circular with double moulding externally, 2 by $1\frac{1}{4}$. No. 460, small, compressed, worn, highly ornamented, loop attached to margin of socket, $2\frac{1}{8}$ by $1\frac{7}{8}$; figured and described at page 385. No. 461, perfect, in fine preservation, plain, except a slightly raised bar, round circular socket, semilunar edge, loop well formed; $2\frac{3}{4}$ by $2\frac{1}{4}$.—*Presented by the Executors of Leslie Ogilby, Esq.* No. 462, thick, plain, casting defective at margin of oval socket, triple core-mark, lunette edge, loop wide; $3\frac{1}{4}$ by $2\frac{3}{4}$. No. 463, perfect and in fine preservation, slender, thin, semilunar edge: socket circular, within it runs a narrow fillet $\frac{5}{8}$ ths below the edge of the socket, shaft hexagonal; loop small and well cast; $3\frac{1}{8}$ by $1\frac{7}{8}$, and 1 in the clear of the socket (Dawson). No. 464, perfect and in good preservation, flat, axe-shaped, quadrangular in socket, plain, loop small; $3\frac{1}{4}$ by $2\frac{3}{8}$. No. 465, perfect, slender, unornamented, broad, semilunar edge, circular in socket, loop thick; $3\frac{3}{8}$ by $2\frac{1}{4}$. No. 466, a fine specimen, in excellent preservation, with a highly decorated moulding an inch broad surrounding circular socket, axe-shaped edge, six-sided in shaft, loop circular and well cast; $4\frac{1}{4}$ by $2\frac{3}{8}$,

socket $3\frac{3}{8}$ inches deep, and 1 wide in the clear at top (see Fig. 277, page 384). No. 467, plain, thick, semilunar edge, socket oval, loop large and wide; $3\frac{3}{4}$ by $2\frac{1}{2}$; found near Newry, county of Down. No. 468, one of the largest socketed celts in the Collection, flat, highly decorated on the sides, slightly corroded, hatchet-faced, compressed, oval in socket, loop large and thick; $4\frac{1}{2}$ by 3, and $1\frac{1}{2}$ in the clear of the long axis of the socket.

SHELF III., Tray R, contains sixty-eight small socketed and looped celts; numbered from 469 to 536. No. 469, small, plain, lunette-edged, socket oval, with raised margin, loops high and perfect; $2\frac{1}{2}$ inches high by $1\frac{5}{8}$ broad in the blade. No. 470, round-faced, oval socket, with narrow fillet above loop; 2 by $1\frac{3}{4}$. No. 471, narrow, flattened, oval; $2\frac{1}{8}$ by $1\frac{1}{2}$. No. 472, perfect, and in good preservation, round-faced, circular, decorated; $2\frac{1}{8}$ by $1\frac{1}{2}$ (Dawson). No. 473, small, flattened, plain, hatchet-faced, circular; $1\frac{3}{4}$ by $1\frac{5}{8}$. No. 474, imperfect, and much battered; $2\frac{1}{8}$. No. 475, large, loop defective, plain, round-edged, socket circular; $3\frac{1}{8}$ by $2\frac{1}{4}$; found in the county of Tipperary (Sirr). No. 476, round faced, loop large, decorated round circular socket; $2\frac{3}{8}$ by $1\frac{1}{2}$. No. 477, compressed, chisel-edged, loop large, raised fillet below everted edge of quadrangular socket, triple core-mark; $2\frac{3}{4}$ by $1\frac{3}{4}$ (Dawson). No. 478, long, round-faced, fillet decorated, socket oval, loop perfect; 3 by $1\frac{1}{2}$. No. 479, compressed, round-edged, filleted, quadrangular socket; 3 by $1\frac{5}{8}$ (Dawson). No. 480, round-edged, loop prominent, and springing from a much elevated fillet, socket oval; 3 by $1\frac{7}{8}$ (Dawson). No. 481, flattened, lunette-edged with recurved points, filleted, socket a compressed oval; $2\frac{3}{4}$ by $1\frac{7}{8}$. No. 482, a plain, chisel-like celt, without loop, socket quadrangular, edge semilunar; $2\frac{7}{8}$ by $2\frac{1}{8}$.—*Presented by Lord Farnham.* This and the two specimens beneath it, Nos. 496 and 510, are exceptions to the rule on this Tray, and were cast without loops. No. 483, in bad preservation, plain, round-edged, large loop, socket nearly circular; 2 by $1\frac{3}{4}$ (Dawson). No. 484, imperfect, red metal, curiously decorated with raised lines ending in small elevated points running from the origins of the loop; a fillet surrounds the top; lunette-edged; $1\frac{7}{8}$ by $1\frac{3}{4}$. No. 485, flattened, irregular; oval socket margin edge rather straight; loop perfect; $1\frac{3}{4}$ by $1\frac{5}{8}$. No. 486, plain, round-edged, socket circular, loop wide; $2\frac{1}{4}$ by $1\frac{3}{4}$. No. 487, sides nearly

parallel, semilunar edge, quadrangular socket, raised fillet, loop on centre of side; $2\frac{1}{8}$ by $1\frac{3}{8}$. No. 488, plain, thin, round edged, socket oval; $2\frac{3}{8}$ by $1\frac{3}{8}$. No. 489, an imperfect octagon, round-edged, socket circular, loop large; $2\frac{5}{8}$ by $\frac{5}{8}$. No. 490, broad, flat, round-edged, loop and fillet, socket a long oval; $2\frac{1}{2}$ by 2 (Dawson). No. 491, rudimentary, brassy, round-edged, socket circular, decorated fillet; $2\frac{3}{4}$ by $1\frac{7}{8}$.—*Presented by Lord Farnham*. No. 492, narrow, chisel-edged, a corded ornament surrounds the circular socket above loop; $3\frac{7}{8}$ by $1\frac{1}{2}$ (Dawson). No. 493, semilunar edge, loop large, ornamented like foregoing; $2\frac{3}{4}$ by $1\frac{7}{8}$ (Dawson). No. 494, plain, broad-edged socket, circular loop; $2\frac{1}{2}$ by $1\frac{7}{8}$ (Sirr). No. 495, rude, plain, loop defective in casting, edge semicircular, socket oval; $2\frac{3}{4}$ by 2. No. 496, undecorated, axe-shaped in the blade, like Fig. 281, p. 385; socket small and circular; a very remarkable specimen, and without a loop; $2\frac{3}{4}$ long, $2\frac{3}{8}$ wide in the cutting edge, and 1 from out to out of the socket. "Taken up by the Dredge out of the bed of the Shannon, about fifty yards above the New Bridge at Athlone, in October, 1847."—*Presented by the Shannon Commissioners*. No. 497, small, lunette-edged, looped and filleted, socket nearly circular; $2\frac{1}{2}$ by $1\frac{3}{4}$. No. 498, plain, lunette-edged with recurved points, loop imperfect, margin of oval socket defective; $1\frac{7}{8}$ each way. No. 499, perfect, plain, flattened, hatchet-edge, socket oval; 2 each way. No. 500, narrow, chisel-edged, loop wide, socket margin filleted, and wider than cutting edge; 2 by $1\frac{3}{8}$. No. 501, rude, crooked, narrow-bladed, socket a long oval, loop strong; 2 by $1\frac{1}{4}$ (Dawson). No. 502, plain, round-edged, loop perfect, socket quadrangular, with slightly decorated margin; $2\frac{1}{8}$ by $1\frac{3}{8}$ (Dawson). No. 503, a good specimen, decorated with double indented ornament round top, round-faced, socket oval, loop perfect; $2\frac{1}{2}$ by $1\frac{3}{4}$. No. 504, plain semilunar edge, socket circular, loop round, $2\frac{3}{8}$ by $2\frac{1}{8}$. No. 505, ditto, $2\frac{3}{4}$ by 2 (Dawson). No. 506, semilunar edge, loop broad, a fillet surrounds circular socket; $2\frac{1}{2}$ by 2 (Dawson). No. 507, plain, flattened, thick, lunette-edge with recurved points, loop massive; $2\frac{5}{8}$ by 2. No. 508, ditto; $2\frac{3}{4}$ by $2\frac{1}{4}$ (Dawson). No. 509, flattened, semilunar-edged, oval socket, loop imperfect; $2\frac{3}{4}$ by $1\frac{7}{8}$ (Dawson). No. 510, small, plain, without loop, figured and described at pages 383 and 384. No. 511, small, flat, loop defective, chisel edge, socket circular; 2 by $1\frac{3}{8}$ (Dawson). No. 512,

flattened, round-edged, loop worn, socket a compressed oval; 2 by $1\frac{1}{2}$ (Dawson). No. 513, plain, graceful, lunette-edged, socket nearly circular, loop elliptical; $1\frac{1}{2}$ by $1\frac{3}{4}$ (Dawson). No. 514, plain, chisel-edged, looped, socket oval; $1\frac{1}{2}$ by $1\frac{1}{2}$. No. 515, broad, flat lunette-edged, plain, triple core-mark in oval socket, loop imperfect; 2 by $1\frac{1}{2}$. No. 516, plain, round-edged, oval, looped and filleted; $2\frac{1}{2}$ by $1\frac{1}{2}$. No. 517, plain, flattened, corroded, edge round, loop slight, socket oval; triple core-mark; $2\frac{1}{2}$ by $1\frac{1}{2}$. No. 518, broad, flat, compressed, plain, chisel-edged, loop springing from everted margin of oval socket; $2\frac{3}{8}$ by $1\frac{1}{2}$. No. 519, ditto, but more semilunar in cutting edge, $2\frac{3}{8}$ by $1\frac{1}{2}$. No. 520, ditto, in bad preservation, lunette-edge, margin of oval socket inverted, loop attached to edge, core-mark separates below carving into a triple line on each side; $2\frac{3}{8}$ by 2 (Sirr). No. 521, injured in loop and socket, plain; $2\frac{3}{8}$ by $1\frac{1}{2}$ (Dawson). No. 522, large, flat, plain, metal resembles Nos. 421 and 422 on Tray P, semilunar edge, loop perfect; 3 by $2\frac{1}{2}$. No. 523, long, flat, semilunar edge, plain, edge of oval socket everted, loop perfect; $2\frac{7}{8}$ by $2\frac{3}{8}$. No. 524, the smallest celt in the Collection, and the least recorded in the British Isles; figured and described at p. 386 (Dawson). No. 525, rude, imperfect, loop broken, badly cast; $1\frac{3}{8}$ by $1\frac{1}{2}$. No. 526, lunette-edged, oval filleted socket, looped; $1\frac{3}{8}$ by $1\frac{1}{2}$. No. 527, small, flat, corroded, imperfect; $1\frac{3}{8}$ by $1\frac{1}{2}$ (Dawson). No. 528, socket imperfect, margin corroded; $1\frac{3}{4}$ by $1\frac{3}{8}$ (Sirr). No. 529, small, rude, edge straight, loop wide, socket oval; $1\frac{3}{4}$ by $1\frac{3}{8}$. No. 530, small, imperfect in socket, very round in edge, looped and filleted; $1\frac{3}{4}$ by $1\frac{1}{2}$. No. 531, flattened together, imperfect, decorated with longitudinal ridges in front, broad core-markings; 2 by $1\frac{3}{4}$ (Dawson). No. 532, narrow, chisel-shaped, loop broken, socket circular; $2\frac{1}{4}$ by $1\frac{1}{2}$. No. 533, rude, defective, badly cast, round-faced, core-marks rising into a septum; $2\frac{1}{4}$ by $1\frac{1}{2}$.—*Presented by Henry Watson, Esq.*, county of Limerick (see Proceedings, vol. i., p. 361.) No. 534, rude, flat, plain, unsymmetrical, loop high and elliptical, edge round, socket oval; $2\frac{1}{2}$ by $1\frac{1}{2}$. No. 535, edge rather straight, socket oval, with everted lip over indented band, loop prominent; $2\frac{1}{2}$ by $1\frac{1}{2}$ (Dawson). No. 536, of reddish metal, defective, flattened accidentally, loop slight and angular; $2\frac{3}{8}$ by $1\frac{3}{4}$.—*Presented by Lord Farnham.*

SHELF III., Tray S, contains thirty-three socketed celts, looped,

and, for the most part, long and narrow, some decorated; numbered from 537 to 569. No. 537, plain and small, quadrangular in socket, lunette-edged; 2 inches by $1\frac{3}{4}$. No. 538, narrow, quadrangular, plain, loop wanting; $2\frac{3}{8}$ by $1\frac{1}{2}$ (Dawson). No. 539, quadrangular, semilunar edge, large broad loop, everted edge to socket; $2\frac{1}{2}$ by $1\frac{1}{2}$ (Dawson). No. 540, imperfect, loop hammered in, quadrangular, edge round, wreath-like decoration to socket margin; 3 by $1\frac{3}{4}$. No. 541, quadrangular, imperfect, no loop, very small in socket, hatchet edge; $3\frac{1}{8}$ by $1\frac{3}{4}$. No. 542, long, narrow, quadrangular, loop defective, corroded; $3\frac{1}{4}$ by $1\frac{1}{4}$. No. 543, quadrangular, narrow, edge unsymmetrical, decorated with three raised ridges; a form of ornament common in this description of celt; $3\frac{1}{2}$ by $1\frac{5}{8}$ (Dawson). No. 544, defective, straight-edged, quadrangular, slightly decorated; $3\frac{3}{8}$ by $1\frac{5}{8}$ (Dawson). No. 545, large, quadrangular, imperfect on cutting edge, decorated on flat surface with five raised longitudinal lines crossed by a double fillet above; 4 by $2\frac{1}{4}$. No. 546, imperfect, quadrangular; lunette edge with recurved points, large loop, raised socket margin, highly decorated on surface with nine raised lines, every second one of which terminates in three balls; $3\frac{7}{8}$ by $2\frac{1}{4}$ (Dawson). No. 547, defective for about $1\frac{3}{8}$ inch at cutting edge, quadrangular, highly decorated round socket margin, and also on flat surface, by three raised lines ending in balls surrounded with circles. This specimen is now $3\frac{1}{4}$ by $1\frac{3}{4}$. Found at Athlone, and—*Presented by the Shannon Commissioners*. No. 548, quadrangular, badly cast, large loop, lunette-edge; 2 by $1\frac{3}{8}$. No. 549, narrow, quadrangular, straight-edged; $2\frac{3}{4}$ by $1\frac{3}{4}$. No. 550, quadrangular, lunette edge, fillet round socket; $2\frac{3}{8}$ by $1\frac{1}{2}$. No. 551, quadrangular, straight-edged, filleted, loop defective; $2\frac{3}{8}$ by $1\frac{1}{2}$ (Dawson). No. 552, perfect, decorated with roped ornament round oval socket above double fillet, straight, raised line on side-face, semilunar edge; $3\frac{1}{4}$ by $1\frac{5}{8}$. No. 553, narrow, quadrangular, nearly circular in opening of socket, hatchet-face, ornamented on side, loop broken; $3\frac{3}{4}$ by $1\frac{7}{8}$. No. 554, quadrangular, straight-edged, decorated round socket margin, loop wanting; $3\frac{3}{4}$ by $1\frac{7}{8}$. "Found in deepening the bed of the river in the townland of Derrindrehid, parish of Killeshandra, barony of Tullyhunco, and county of Cavan."—*Presented by Board of Works*. No. 555, quadrangular, round-edged; a corded ornament surrounds

top of socket passing through loop; $3\frac{3}{4}$ by $1\frac{7}{8}$. Found at Keelogue Ford, and—*Presented by the Shannon Commissioners.* No. 556, long, narrow, quadrangular, semilunar edge, loop broken, raised fillet round socket; $4\frac{1}{8}$ by $1\frac{3}{4}$ (Dawson). No. 557, quadrangular, semilunar edge, broad fillet round socket; $4\frac{1}{2}$ by 2 (Dawson). No. 558, very long, narrow, and quadrangular, broader in the lateral than the antero-posterior diameter, decorated by a raised line ending in a circle on the flat surface (see Fig. 283, p. 385). No. 559, short, thick, edge curved, socket oval, with a roped and filleted ornament round margin; $2\frac{1}{8}$ by $1\frac{1}{2}$. No. 560, round-edged, six-sided, socket round margin depressed; $2\frac{1}{2}$ by $1\frac{3}{4}$. No. 561, hatchet-shaped, plain, six-sided; $2\frac{3}{8}$ by $1\frac{3}{4}$. “Found at Keelogue Ford, and—*Presented by the Shannon Commissioners.*” No. 562, four-sided, full-raised ornament round socket, lunette-edged; $2\frac{3}{4}$ by $1\frac{7}{8}$. No. 563, quadrangular, straight-edged, decorated with three straight lines on flat surface; 3 by $1\frac{1}{8}$ see Fig. 284, p. 386.—*Presented by Executors of Leslie Ogilby, Esq.* No. 564, broad, flat, six-sided, hatchet-edged, decorated on flat surface with straight lines ending in arrow points, depressed ornament round socket; $3\frac{1}{4}$ by $2\frac{1}{8}$; found at Keelogue Ford, and—*Presented by the Shannon Commissioners.* No. 565, flat, compressed, oval in socket, semilunar in blade, edge sharpened, decorated on side-face by five longitudinal lines, each ending in a circular elevation; $3\frac{1}{8}$ by $2\frac{3}{8}$. No. 566, flat, quadrangular, straight-edged; decorated on flat surface with raised lines and knobs; round oval socket with a double raised fillet; $3\frac{3}{8}$ by $2\frac{1}{8}$ (Dawson). No. 567, broad, imperfect, chisel edge, double fillet round socket margin; $3\frac{3}{8}$ by $2\frac{1}{2}$. No. 568, the longest socketed celt in the Collection, quadrangular, lunette-edged, raised margin round socket, wide oval loop; $5\frac{1}{8}$ by $2\frac{1}{8}$. No. 569, four-sided, chisel-edged, decorated on the surface and round the socket margin; $4\frac{1}{8}$ by $1\frac{7}{8}$.

SHELF III., Tray T, contains six perfect and twenty-six fragments of bronze celts of different patterns; numbered from 570 to 601. No. 570, the upper fragment of a large palstave. No. 571, a small, thin, socketed celt, wanting loop; 2 inches long by $1\frac{3}{8}$ wide. These two specimens—*Presented by W. R. Wilde, Esq.* See Proceedings, vol. iii. p. 539. No. 572 is of the same size and form, but much corroded and encrusted. No. 573, imperfect, a portion

having been removed for analysis; $1\frac{3}{4}$ inches each way; looped, round-edged, unornamented, triple core-mark in socket, supposed to be from the county of Cavan, Museum mark—Farnham 38. Coppery, possessing only 4.56 per cent. of tin (see No. 4 in Mr. Mallet's paper, p. 322, Transactions, vol. xxii.). "The metal was very soft, and resembled No. 2 [new No. 16, on Tray A] in colour, but was not quite so red. Specific gravity, 8.428." No. 574, perfect, small, flat, socketed, ornamented on side, loop large, socket oval; $1\frac{7}{8}$ by $1\frac{1}{2}$. No. 575, an imperfect socketed celt, round-edged; 3 by $1\frac{7}{8}$; analyzed. No. 576, a long hollow celt, imperfect, analyzed by Mallet (No. 3), slightly ornamented round fragment of circular socket; $3\frac{3}{4}$ by $1\frac{7}{8}$. No. 577, perfect, chisel-edged, socket oval with indented margin; $2\frac{7}{8}$ by $1\frac{1}{2}$, found in the Shannon, and—*Presented by the Shannon Commissioners*. No. 578, large, plain, perfect, round-edged, socket circular, metal reddish; 4 by $2\frac{1}{4}$, "found along with a golden bracelet." No. 579, perfect, flat, socket oval, with indented margin; $3\frac{3}{4}$ by 2. No. 580, small fragment of a palstave, $1\frac{7}{8}$ long. No. 581, fragment of blade portion of a palstave; $2\frac{1}{2}$. No. 582, ditto, rude and hammered; $2\frac{5}{8}$ (Sirr). No. 583, fragment of palstave, casting defective; $3\frac{3}{4}$. No. 584, fragment of a socket celt, rudely cast; 3. No. 585, fragment of palstave, defective in casting; $3\frac{7}{8}$. No. 586, defective palstave, $3\frac{1}{2}$; a portion removed for Mallet's analysis. No. 587, a thick, rude, broad-edged palstave, hammered at top, slight wings, no stop; $3\frac{3}{8}$ by $2\frac{1}{8}$.—*Presented by the executors of Leslie Ogilby, Esq.* No. 588, a very much corroded palstave, of a greenish-white colour; 5 by 2. No. 589, an imperfect palstave; $4\frac{5}{8}$ by 2, said to have been found at Dunshaughlin.—*Presented by Lord Farnham*. No. 590, a massive, imperfect palstave, of a golden yellow or Dowris-bronze colour, much hammered at top, ornamented on front, three sunken ornaments, apparently drilled in, present upon external face; $4\frac{3}{4}$ by $2\frac{1}{8}$. No. 591, a small wedge-shaped copper celt, thin, flat, and exceedingly primitive in shape; $2\frac{3}{4}$ by $1\frac{3}{4}$ (Sirr). No. 592, fragment of the upper end of a long, narrow celt; $2\frac{5}{8}$. No. 593, a small, long, narrow celt, with slight flanges, much corroded; 3. No. 594, perfect, thin, flat, of the long, narrow variety; $2\frac{7}{8}$; analyzed by Mr. Mallet. No. 595, perfect, long, narrow; $5\frac{1}{2}$ by $2\frac{3}{4}$. No. 596, lower fragment of a large, thick, long, and narrow celt; $3\frac{1}{2}$. No. 597,

portion of a broad, thin, flat celt, resembling a copper specimen both in shape and colour, hammered at top; $3\frac{1}{4}$ by $2\frac{5}{8}$; analyzed by Mallet, as No. 1, see Transactions, vol. xxii. p. 322—*Presented by Lord Farnham*. No. 598, flat, lunette-edged, much hammered at top, rudimentary flanges; $3\frac{1}{4}$ by $2\frac{1}{2}$. No. 599, long and narrow, lunette edge, much corroded; $4\frac{1}{4}$ by $2\frac{1}{8}$. No. 600, long and narrow, hammered on side of cutting edge; 6 by $2\frac{1}{2}$. No. 601, flat, broad, and straight in cutting edge, of the long narrow variety, much hammered at top, metal reddish; $4\frac{3}{8}$ by $3\frac{1}{8}$.

RAIL-CASE **K** contains forty-nine celts of different varieties, and numbered from 602 to 650. No. 602, a copper celt of the same variety as No. 10 on Tray **A**; $5\frac{5}{8}$ inches long, by $3\frac{7}{8}$ inches broad in the cutting edge, and $1\frac{1}{8}$ at the small square extremity. No. 603, a cleaned copper specimen of the same variety, but somewhat smaller, rough, unsymmetrical in blade; 5 by $3\frac{3}{8}$. No. 604, a very small copper celt; $2\frac{1}{2}$ by $1\frac{1}{2}$. No. 605, a triangular copper celt, much hammered, as if forged without smelting from a piece of native copper, thin in the middle, elevated on the edges; $3\frac{1}{4}$ by $2\frac{5}{8}$. The locality of this specimen is questionable; it has all the appearance of an American celt; it forms part of the *deposit* recently made by the *Royal Dublin Society*. No. 606, bronze, long and narrow, imperfect at small end, most highly ornamented on both surfaces with a great variety of pattern (see Figs. 288 and 289, p. 389). The patina has been removed in several places, and with it the punched or hammered ornamentation; $6\frac{1}{4}$ by $3\frac{3}{4}$; enumerated as 618 in Proceedings, vol. vii., p. 129. No. 607, long and narrow, with a thick patina or varnish all over it, slightly hammered into an ornament on the side-edges, a double-looped dotted ornament on side face; $5\frac{7}{8}$ by 3 (see Fig. 290, p. 389). No. 608, one of the very finest celts of the long, narrow variety in the Collection; described and figured at p. 365, and resembling No. 72, on Tray **B**, both in the ornamentation on the edges and flat surfaces (see Proceedings, vol. vi. p. 314). No. 609, long and narrow, hammered edges, highly ornamented on flat with ridges and punched indentations; a slight flange occupies edges from small extremity to cutting-face; $4\frac{7}{8}$ by $2\frac{1}{8}$, found in the county of Galway, and—*Presented by R. A. Gray, C.E.* No. 610, a very perfect specimen, long and narrow, broad cutting-edge, entire flat surface covered with longitudinal punched

indentations; $6\frac{1}{4}$ by $3\frac{3}{8}$.—*Deposited by the Royal Dublin Society.* No. 611, very rude, much corroded, marked on surface in several places with a stamp; 3 by 2. No. 612, long and narrow, plain; 5 by $2\frac{1}{4}$. No. 613, ditto, small; 4 by $2\frac{3}{8}$. No. 614, ditto; $4\frac{3}{4}$ by $2\frac{1}{4}$. No. 615, ditto, plain, perfect, broad-edged; $5\frac{1}{2}$ by 3; found in excavations at Portnashoal, on Lower Bann.—*Presented by the Board of Works.* No. 616, long, narrow, with a beautiful cast ornament on the side, and a rope decoration on edge, patina apparent in some places like a varnish, lunette-edged; $5\frac{7}{8}$ by $2\frac{1}{2}$ (see Fig. 294, p. 390). No. 617, long and narrow, slightly imperfect at extremities, much corroded on one side, decorated on the other, covered with green patina, stop and flange rudimental; $6\frac{3}{4}$ by 3 (see Proceedings, vol. vii., p. 129.)* No. 618, rude, in bad preservation, round-edged, rudimental stop and flange; $4\frac{1}{4}$ by $2\frac{3}{8}$.—*Deposit R. D. S.* No. 619, long and narrow, plain, of bright yellow metal; $5\frac{1}{2}$ by 3.—*R. D. S.* No. 620, corroded on one side, lunette-edged, rudimental stop and flange, highly decorated below curved stop with triangular dotted ornament; $5\frac{3}{8}$ by $3\frac{7}{8}$ (see Fig. 292, p. 390; see also Proceedings, vol. vii., p. 129.) No. 621, of fine close-grained yellow metal, saddler's knife-shaped blade, stop and flange well marked although not high, decorated both on surface and side edges; $4\frac{3}{4}$ by $2\frac{3}{4}$. See Fig. 268, p. 379. No. 622, much corroded, long and narrow, straight-edged; $5\frac{3}{4}$ by 3.—*R. D. S.* No. 623, short, imperfect at top, lunette-edged; $3\frac{3}{8}$ by $2\frac{7}{8}$.—*R. D. S.* No. 624, lunette-edged, slightly imperfect, rudimental stop and flange; $4\frac{1}{4}$ by 2. No. 625, imperfect, unsymmetrical, lunette-edged, highly decorated with cast and tooled ornament on sides and edges, rudimental stop and flange; $4\frac{3}{4}$ by $3\frac{3}{8}$ (see Fig. 293, p. 390).—*Deposited by Sir B. Chapman, Bart.* No. 626, rude, plain, lunette-edged; 4 by $2\frac{1}{2}$.—*R. D. S.* No. 627, cleaned, of gold-coloured bronze, slightly corroded, broad saddler's knife-edge, rudimental stop and flange, decorated with engraved and hammered ornament on flat surface between stop and

* At vol. vii. pp. 129 and 130 of the Proceedings, six of the celts in this Case are enumerated and described as placed in Case L; they may be identified in the present arrangement under the following alterations in the numbering:—Nos. 617, 620, and 621, are the same in both; No. 618, in the Proceedings, is now 606; No. 619, is 607; No. 622, is 635; No. 609, is 686. In Rail-case L, No. 623, in Proceedings, is now 669; and No. 624 is 668.

blade; $5\frac{3}{4}$ by $3\frac{1}{2}$ (see Fig. 299, p. 390). No. 628, a curious specimen, apparently so recent as to look like a forgery, deep-groove, semicircular edge; $4\frac{1}{2}$ by $2\frac{1}{4}$; figured by Mr. Du Noyer, in the *Archæological Journal*, vol. iv. No. 629, lunette-edged, wings, and deep groove but no stop, outside edges of wings deeply ornamented, as if with a file; it has a modern appearance; $4\frac{5}{8}$ by $2\frac{1}{4}$.—*Deposited by Sir B. Chapman, Bart.* No. 630, a very curious, and, probably, modern specimen, with wings and loop, but no stop, decorated on side-edges like the foregoing, and ornamented in the groove with a chequered pattern; $3\frac{3}{8}$ by $1\frac{5}{8}$. No. 631, a small grooved celt, of unique shape, without stop, looking like a forgery; $2\frac{7}{8}$ by $1\frac{3}{8}$. No. 632, the beautiful fan-shaped celt, figured and described at pp. 373 and 379. No. 633, cleaned, gold-coloured, somewhat like the foregoing, but edge more lunette-shaped, side-view figured and described at p. 379, broad flange, curved stop; $4\frac{1}{2}$ by 3. No. 634, a small, very perfect, fan-shaped celt, like No. 632; $5\frac{1}{8}$ by $3\frac{1}{8}$, found in the county of Carlow, and—*Presented by Dr. O' Meara.* No. 635, a plain palstave celt, without loop, lunette-edged, high wings, thin septum, mould edges irregular; $4\frac{1}{4}$ by $2\frac{1}{4}$. See *Proceedings*, vol. vii. p. 129. No. 636, a very beautiful long palstave, with wide hatchet face, narrow shaft, broad wings, narrow groove, deep curved ornament below the stop; $7\frac{1}{2}$ by $3\frac{1}{8}$; marked in *Proceedings* as 609; found in the Silver River, townland of Coleraine Middle, King's County. No. 637, a thick, massive palstave, unsymmetrical, lunette edge with recurved points, rude cast ornament below stop; 5 by $2\frac{3}{8}$; it and Nos. 638 and 641 were—*Deposited by Sir B. Chapman, Bart.* No. 638, a palstave, imperfect, wings and stop coalesce, raised bow-and-arrow ornament below stop, semilunar edge; 6 by $2\frac{1}{2}$. No. 639, a massive winged palstave, lunette-edge, slightly imperfect at top, bow ornament; $5\frac{3}{8}$ by $2\frac{3}{4}$.—*Presented by Mrs. Ball.* (See *Proceedings*, vol. vi., p. 525.) No. 640, small, rude, short groove, side socket; 3 by $1\frac{1}{4}$. No. 641, imperfect, deep side socket ending in raised cast ornament, a large knob of metal is attached to one side; $3\frac{7}{8}$ by 2. No. 642, a short, unsymmetrical palstave, with a wind in the casting, broad wings and stop, semilunar edge, hammered at top; $4\frac{1}{2}$ by $2\frac{1}{8}$.—*R. D. S.* No. 643, ditto, large, lunette-edged with recurved points; $5\frac{1}{2}$ by $2\frac{3}{4}$.—*R. D. S.* No. 644, ditto, smaller, without raised stop, but having

thin ends of wings hammered in below over the groove; it resembles in this respect, Fig. 265, and several specimens on Trays **K**, **M**, and **N**. There is a small and apparently modern hole in one of the wings; $4\frac{3}{4}$ by $2\frac{1}{4}$.—*R. D. S.* No. 645, plain, badly cast, covered with a green oxidation, chisel-edged; $5\frac{1}{4}$ by $2\frac{1}{8}$.—*R. D. S.* No. 646, a short lunette-edged palstave; $4\frac{1}{4}$ by $2\frac{1}{8}$.—*R. D. S.* No. 647, a short palstave, lunette edge, wings and stop uniting; $4\frac{1}{2}$ by $2\frac{1}{4}$.—*R. D. S.* No. 648, a small, imperfect palstave of reddish metal, hammered, wings and stop coalescing; $3\frac{1}{2}$ by $1\frac{3}{4}$.—*R. D. S.* No. 649, a lunette-edged palstave, with recurved points, septum thick, wings well developed, but stop rudimentary; $4\frac{1}{4}$ by $2\frac{1}{4}$.—*R. D. S.* No. 650, a palstave, long in the shaft, lunette-edged, rudimental stop, wings thin, hammered at top; 4 by $2\frac{1}{4}$.—*R. D. S.*

RAIL-CASE **L** contains thirty-eight celts of the palstave and socketed varieties; numbered from 651 to 688. No. 651, a very perfect palstave celt, sharp at the angles, hammered all over the surface, and covered with a reddish-brown patina, hatchet blade, round small extremity projecting above wings, slight stop; $6\frac{3}{8}$ inches long, by $2\frac{7}{8}$ broad. This specimen has a fresher or more modern appearance than any other of the same variety in the Collection. It, and the seven following were—*Deposited by the Royal Dublin Society.* No. 652, a long, narrow palstave, of bright yellow metal, and remarkable for the thinness of wings and stop; $6\frac{1}{2}$ by $2\frac{1}{8}$.—*R. D. S.* No. 653, a long, chisel-edged palstave, without a stop, slightly hammered at top; $5\frac{3}{4}$ by $2\frac{1}{4}$.—*R. D. S.* No. 654, a massive palstave, slightly defective, dark-brown colour, bow ornament below stop; 7 by $2\frac{3}{4}$.—*R. D. S.* No. 655, a palstave, corroded, hammered on semicircular edge, $5\frac{1}{8}$ by $2\frac{3}{8}$.—*R. D. S.* In outline of wings and oblique stop it resembles 636. No. 656, a narrow palstave, much corroded, round-edged; $5\frac{1}{2}$ by 2.—*R. D. S.* No. 657, ditto, with slight ridge on site of stop, hammered; $4\frac{7}{8}$ by 2.—*R. D. S.* No. 658, a small, badly cast, corroded palstave, wings and stop coalesce; 4 by $1\frac{1}{8}$.—*R. D. S.* No. 659, a short palstave, with lunette edge, raised straight ornament below stop; $4\frac{1}{4}$ by 2.—*Presented by Viscount Castlemaine.* (See Proceedings, vol. vii., p. 297.) No. 660, a chisel-edged palstave, said to have been found in one of the Strokestown crannoges; $5\frac{1}{8}$ by $2\frac{1}{4}$. No. 661, large, perfect, lunette-edged palstave; $5\frac{5}{8}$ by $2\frac{1}{2}$. The remainder of the celts in this Case are

socketed. No. 662, the largest of the socketed lunette-edged celts in the Collection, although not so long as the four-sided chisel-edged specimen, Fig. 283, described on p. 385; it measures $4\frac{1}{2}$ inches long, $3\frac{1}{4}$ across the blade, and 2 from out to out of the long diameter of the oval socket.—*Deposited by the Royal Dublin Society.* No. 663, a large, massive, socketed celt, lunette edge, slightly ornamented with fillet below everted margin of oval socket; $3\frac{3}{4}$ by $2\frac{7}{8}$. No. 664, a graceful specimen, loop defective, semilunar edge, slightly oval socket; $3\frac{7}{8}$ by $2\frac{5}{8}$.—*Presented by T. B. Huthwaite, Esq.* No. 665, flattened, round edge, triple ornament around socket; $3\frac{3}{4}$ by $2\frac{3}{4}$.—*Deposited by Sir B. Chapman, Bart.* No. 666, plain, short, round-edged, socket oval; $2\frac{7}{8}$ by $2\frac{1}{4}$. No. 667, perfect, and covered with a brown deposit probably ferruginous, semilunar edge, raised fillet below four-sided socket; 3 by 2. No. 668, plain, unsymmetrical, blade round, loop broken, socket oval; $2\frac{3}{4}$ by $2\frac{1}{8}$. No. 669, light, slender, thin, octagon in section of socket, loop low down on side, semilunar edge; $2\frac{3}{4}$ by $1\frac{5}{8}$; numbered as 623 in Proceedings, vol. vii. p. 129. No. 670, small, short, compressed, hatchet-faced, mould-marks sharp, as if not cleaned off, slightly decorated below oval socket; $1\frac{1}{2}$ long, and $1\frac{5}{8}$ broad in the blade. The four next specimens have been cleaned by the process described at p. 374, in order to show their original golden colour. No. 671, of a beautiful golden lustre, perfect in every respect, large, circular, lunette edge, slightly unsymmetrical, a raised quadruple roping below everted socket margin; $3\frac{3}{4}$ by $2\frac{1}{2}$. No. 672, perfect, and of a beautiful reddish-yellow bronze, lunette edge, socket circular, double-grooved ornament; $2\frac{3}{4}$ by $2\frac{1}{4}$. No. 673, gold coloured, slightly corroded, and defective in margin of quadrangular socket, raised double fillet, lunette-edged with recurved points; $2\frac{3}{8}$ by $1\frac{7}{8}$. No. 674, light, graceful, axe-edged, octagon in shaft, raised ornament below circular socket, like Fig. 276, p. 384, slightly corroded all over; 4 by $2\frac{1}{2}$. No. 675, slender, plain, chisel-edge, socket circular, loop long; $2\frac{3}{4}$ by $1\frac{3}{8}$.—*R. D. S.* No. 676, perfect, large, lunette edge, roped ornament round oval socket; $3\frac{1}{2}$ by $2\frac{1}{2}$.—*R. D. S.* No. 677, corroded, loop defective, round-edged, oval socket, remains of fillet ornament; $3\frac{1}{4}$ by $2\frac{3}{8}$.—*R. D. S.* No. 678, plain, round-edged, oval socket; 3 by $2\frac{1}{2}$.—*R. D. S.* No. 679, defective, corroded, round-edged; $3\frac{1}{4}$ by $2\frac{1}{4}$.—*R. D. S.* No. 680, perfect, an irregular octagon

in the shaft, socket a long oval, edge semilunar; $2\frac{3}{4}$ by $2\frac{1}{4}$.—*R. D. S.* No. 681, of reddish metal, covered with a green corrosion, lunette-edged; $2\frac{3}{8}$ by $2\frac{1}{4}$.—*R. D. S.* No. 682, an imperfect cast, socket flattened, six-sided, edge round; $2\frac{7}{8}$ by $2\frac{1}{8}$, procured from the county of Longford, and presented to Royal Dublin Society by Colonel Patrickson.—*R. D. S.* No. 683, fractured across blade, much corroded, socket oval; $3\frac{5}{8}$ by $2\frac{1}{2}$.—*R. D. S.* No. 684, perfect, small, lunette edge, traces of cast ornament between fillet and margin of oval socket; 2 by $1\frac{7}{8}$.—*R. D. S.* No. 685, small, slender, plain, defective, one of the least of its kind, scarcely 2 by $1\frac{1}{4}$.—*R. D. S.* No. 686, a diminutive socketed celt, the smallest in the Collection except No. 524, which is figured and described at p. 386; $1\frac{1}{16}$ by $\frac{1}{4}$.—*Deposited by the Royal Dublin Society.* No. 687, fragment of a large socketed celt found in an ancient crucible, described at page 158. No. 688, a long, narrow, plain celt, fitted into a model handle, figured and described at page 370.—*Presented by R. Ball, Esq.* (see Fig. 256, p. 370).

No. 1, in this Rail-case, is the celt and handle belonging to Mr. Murray, figured on p. 370. Nos. 2 and 3, the bronze mould, and cast referred to at p. 396; Nos. 4, 5, 6, and 7 are flat, circular portions of antique bronze, found at Balrath, in the county of Westmeath, between (says Mr. R. Murray, of Mullingar, from whom they were procured) "Dysart and Rathconrath, a place abounding in raths and cairns; and along with these pieces of bronze slag were found two or three rough and unfinished-looking celts." Nos. 8 and 9, brass models of English celt-moulds—*Presented by Lord Talbot de Malahide.* The originals are in the possession of Lord Ravensworth.

How or from what parts of the country the bronze celts—plain, palstave, and socketed—deposited in the Museum by the Royal Dublin Society, as specified in the Proceedings of 27th February, 1860, were originally obtained, there is now very little known. Several have attached card-labels, bearing numbers (19, and from 275 to 388), but, except one entry, "11–24, chip axes of brass," in a printed list of 1812, and referring to Vallancey's *Collectanea*, vol. iv., the records of that Society do not contain any notice of such articles.

Thirty-one have small green printed labels, corresponding with the numbers in the Catalogue made by the late Mr. J. M. Kemble for the Manchester Exhibition of 1857.

All the celts, as well as other articles in the Collection, that ever bore a mark, still retain on the reverse side all their original labels, viz.:—those referring to the Dawson or Sirr Lists; those of the old Registry of the Museum, vols. i. and ii.; also marks referring to the Trays on which they were placed before the present arrangement and classification, as specified in Mr. Clibborn's Catalogue for the Dublin Industrial Exhibition of 1853. These different references are all set forth in the Manuscript Registry drawn up under the author's direction by Mr. Eagar, and from which this Catalogue has been compiled. That registry, together with all the original labels, mostly supplied by the Board of Public Works, and the Shannon and Drainage Commissioners, have been carefully preserved, and may be had recourse to for purposes of identification.

As specified in the foregoing enumeration, 23 of the celts were found in the Shannon during the drainage operations carried on in that river some years ago. Of these, seven were procured from Keelogue Ford, near Meelick, between the county of Galway and the King's County, already referred to in the description of stone celts at p. 48. A very general impression has long prevailed, and the late Mr. Kemble shared in it (see his Address, vol. vi. p. 464), although there is no record to warrant it in any of the Proceedings of the Academy, that the different specimens from Keelogue were found in distinct strata, arranged in layers of iron, bronze, and stone articles. Such, however, has not been shown to be the fact. That they were deposited in that order during the many contests between the Connaught and Leinster-men at that pass, for centuries, there can be little doubt. But then it must be remembered that the entire depth of silt which had accumulated for thousands of years over the surface of the ford (caused by the crossing of the great esker at that point),

did not much exceed eighteen inches in any part, and that this deposit had become so hard and identified with the stratum on which it rested, as to require blasting. It will, therefore, be seen that no such observation could well have been made, even if the contractors and workmen had been forewarned of the probability of the circumstance alluded to. Furthermore, the force of the current during floods would sweep off the greater portion of such articles into the deep water below the ford. It is much to be regretted that no antiquary visited the place when the works under the Shannon Commissioners were in progress.*

In a great national Collection like this, derived from all parts of the country, and intended to aid history and ethnology, it is important to bring together, and, when possible, to increase antique articles in proportion to the numbers in which they have been discovered. By so doing we learn what things were in common use, and what were scarce. It is only after collecting for many years, that anything like a complete topographical arrangement by counties or provinces, even of typical articles, can be attempted. Bronze celts are now of nearly as common occurrence as when Vallancey writing in 1782, said: "Multitudes of these instruments are daily dug up in Ireland."

Among the rare uses to which, in the later days of celt-making, one form of the long-handled palstave with a semicircular blade was applied, was that of fixing it in a bronze socket, at right angles with which there was a circular aperture, through which a wooden handle was passed, and thus the implement was converted into an axe, either of the weapon or

* Since the former part of this Catalogue was printed, search has been made at the office of the Board of Works, for any memoranda which could warrant the impression respecting the stratification of these antiquities; but none such could be found, I have also communicated with Sir Richard Griffith, Chairman of the Board of Works, who in presenting these articles to the Academy on the 9th January, 1848, made the observations which I have printed at p. 48; and he has confirmed the foregoing statement.

tool species. See the figure of one of these implements, so mounted, in Lindenschmit's Catalogue of the Romano-Germanic Central Museum in Mayence (*Heft iv. Taf. 2, Fig. 685*). There is another blade of this kind in the Museum at Copenhagen, for a fac-simile drawing of which the author is indebted to Director Thomson. Vallancey has represented an Irish one by Fig. 3, Plate 10, vol. iv. of his *Collectanea*.* There is an aperture or notch in the small end of each of these articles for passing a stud or rivet through.

SPECIES I.—WEAPONS—BRONZE, II. AND III.

SWORDS.—The sword and its diminutive, the dagger, is not only the most ancient, but the most widely disseminated pure weapon, and that which has remained longest in use in the world. It has at different times, and by various nations, been made of divers substances,—stone, wood, bone, copper, bronze, and iron, of all of which we possess examples in the Museum. In shape, the most primitive sword was sharp-pointed, double-edged, and used for stabbing and thrusting, as shown in all our bronze specimens, and not a heavy-backed, single-edged, cross-hilted weapon for hacking and cutting, as the more modern kinds, forged from iron. Although not nearly so numerous as the celts, our collection of swords and daggers is very rich, amounting together to 282 specimens, which are arranged

* Vallancey's engravings were taken from a collection of very faithful drawings by Gabriel Beranger, possibly those made for the Right Hon. W. B. Conyngham's intended Atlas of Irish Antiquities, to which he invited the attention of the Academy in 1791. They afterwards passed into the possession of the late Austin Cooper, to the courtesy of whose son, the Rev. A. Cooper, I am indebted for the loan of them. They have enabled me to identify several articles now in the Academy. Vallancey only engraved a portion of them. Beranger was a French artist resident in Dublin at the end of the last century.—(See Gilbert's History of Dublin, vol. iii., p. 360.)

Referring to the celt moulds described at p. 392, it may be remarked, that in 1788 the Rev. Mr. Hamilton, F.T.C.D., exhibited to the Committee of Antiquities a bronze celt in its stone mould, stated to have been found in Ireland.

on Trays from **U** to **HH**, at the commencement of the Western Gallery, and in Rail-case **O**. The Irish term for a sword is *Claidheamh*, a generic word applicable to all forms of this weapon. The sword-blades present three well-marked varieties,—the leaf-shaped, both long and short; the straight-edged rapier, both narrow and triangular; and the large, broad, round-pointed, and occasionally curved or scythe form. It is remarkable that although there are representations of celts on our sculptured crosses, the swords of the combatants figured thereon are invariably of the iron pattern, long, straight, round or angle-pointed, and cross-hilted, as if the bronze celt had remained in use after the introduction of the iron sword.

There is no mention made in our authentic published annals and histories of bronze swords; the introduction of such weapons was probably pre-historic, and they very likely continued in use until the general employment of iron, and even for long after; for it is not likely that a “trusty blade” of fine bronze, beautifully balanced, and with a highly decorated and gold adorned handle, would ever have been broken up and re-cast, to turn the metal to other purposes. A greater number of bronze swords, and of greater variety, have been found in Ireland than in any other part of the British isles. A large number of those in the British Museum are Irish. The iron swords found in Ireland are chiefly modern, and the oldest specimens which we possess are evidently Scandinavian.

Among the presents made by the chief Kings of Erin to their dependent princes, as the stipends for the tributes of oxen, swine, escort, and refreshment, &c., as stated in the *Leabhar na g-Ceart*, there were vast numbers of swords and shields. Thus the King of Casheal gave the Prince of Cruchan 100 swords; bestowed on the Prince of Ailach 50, and on the Lord of Tullach Og, 30; to the King of Uladh he gave 100 swords; 30 to the King of Taimar, and 40 to the hero of Gabhran, or Ossory; and so in like proportion from each of the monarchs of

Erinn to their dependant chieftains.* In the particulars of these weapons recorded in Beanan's poetic description of the tributes, we read of "swords for wounding; for all strength; fit for war; swords imported from afar; swords for the maiming of hosts; bright swords; polished swords of battle; slender swords; keen-edged swords; swords in their scabbards; with razor edges; beautiful swords of shining lustre;" beside other forms to be referred to hereafter.

The bronze swords appear to have suffered less from oxidation than the celts, and consequently the colour of the metal in its present state is generally lighter than that in the latter but older implements. Of those examined by Mr. J. W. Mallet, two were found to contain less tin than the generality of bronze celts; one contained 3·37 per cent. of lead, and only 8·52 of tin; but in another there were found above 11 per cent. of tin. Further and more extended analyses of the composition of the metal employed in the formation of our bronze swords is, however, required to enable us to form any well-grounded opinion on the subject. The edges of most of those swords are in fine preservation, as if they had never been hacked, and were only used for stabbing. To exhibit the original colour of these weapons, four of them, Nos. 57, 58, 59, and 60, on Tray X, have been cleaned, and when compared with the bright bronze already described, will be found to present more of the red hue of the copper than the golden lustre observed in celts and spears. With few exceptions, we do not find on the swords the same smooth patina or remains of a crust or lacquer, observed on several celts, but a ferruginous deposit is not uncommon (see page 394). Several of the short curved swords and battle-axes are copper.

* Dr. O'Donovan, in a note to *Leabhar na g-Ceart*, says, the word *claideam* or *clot-deam* is evidently cognate with the Latin *gladius*, and adds: "It is remarkable that Giraldus Cambrensis makes no mention of the sword among the military weapons used by the Irish in his time. The mention of the swords in this work as among the weapons presented by the kings to their chieftains shows the inaccuracy of Cambrensis." See p. 32.

The first variety is of the pure Grecian type, formed apparently on the model of the leaf of the aloë or agave; narrow near the handle, and gradually swelling in breadth to within a third of the point,—having a thick solid ridge or midrib running up the centre of the blade, and a fine sharp edge on both sides from hilt to point, which latter is spear or lancet-shaped; all cast in a mould, and not bearing any marks of the hammer, the grinding-stone, or the file. This variety

exhibits some minor differences in the shape of the handle-plate to be explained hereafter; but the most ostensible distinctions between it and the second are shown in these two illustrations, drawn one-fifth the natural size, and here placed in juxtaposition, to show the difference in shape and relative proportions of the best-marked types of the leaf-shaped and rapier forms of bronze swords. The first, Figure 313, is drawn from a very fine broad leaf-shaped specimen, No. 56 on Tray X, smooth in the blade, with the handle-plate perfect, having eight rivet-holes, and deeply notched at the lower portion of the blade for catching the hilt. It is $22\frac{1}{2}$ inches long, and 2 wide in the broadest part. It was—*Deposited by Sir Benjamin Chapman, Bart.*

Figure 314 is, by permission of Lady Staples, drawn from the most perfect specimen of bronze rapier blade ever found in Ireland, and certainly the finest article of its class of which we have now any record in Europe. It is $30\frac{1}{4}$ inches long, $2\frac{1}{4}$ across the widest portion of the flat



Fig. 313, No. 56.



Fig. 314.

handle-plate, and five-eighths across the centre of the blade, where the thick midrib forms with the side edges the accompanying figure in section, drawn the size of the original. It was found in a turf-bog, in the townland and parish of Lissane, county of Derry, on the property of Sir Thomas Staples, Bart.* No. 66 on Tray **X**, now $13\frac{3}{8}$ inches long, $2\frac{1}{8}$ wide in the handle-plate, and 1 across the middle of the blade, is the fragment of a rapier which was evidently much larger than that figured above, and was in all probability 40 inches in length (see p. 474). All the swords in our collection are beautifully balanced; many of them, especially those of the rapier variety, are so tempered that they may be bent considerably, and will afterwards spring back to their original straight form.



Fig. 315.

The Leaf-shaped Swords present two varieties,—the broad and the long; and the six following cuts, drawn one-sixth the size of the originals (except Fig. 317, which is one-fifth), represent typical specimens of both these kinds. Fig. 316, from No. 45 on Tray **W**, has a thick flat midrib and grooved side bevels, or feather-edges, with hilt notches in the base of the blade. The handle-plate, which is slightly defective, has four rivet-holes, and has been welded by an over-lap. It is $18\frac{1}{2}$ inches long, by 1 wide in the broadest portion of the blade. Fig. 317, drawn from No. 43 on Tray **W**, represents a smooth bright yellow sword-blade, $17\frac{1}{4}$ inches long, by $1\frac{1}{4}$ broad, rather square in the handle-plate, which is $2\frac{1}{4}$ in length. It is perfectly smooth in the blade, sloping gradually from the slight midrib to each edge. The handle-plate, which is flat, short, and has four rivet-holes, descends from the blade beneath an angular shoulder, and in this respect differs from all the other swords in the Collection; but Nos. 41, 42, and 68, slightly resemble it. The four next cuts represent sword-blades of the second variety, gradually increasing in

* Mr. Wilde has presented to the Academy, by permission of Lady Staples, a model of the bronze rapier alluded to above.

length, and lessening in breadth of blade, like the leaf of the iris; also wanting the central stem or midrib, in place of which a slight fulness traverses the middle of the blade from hilt to point. Figure 318 is drawn from a very perfect sword-blade, No. 5 on Tray Υ , 23½ inches long, including the handle-plate, which is 4½; it is 1½ wide in the centre of the blade, which is margined by a grooved feather-edge. The handle-plate is nearly per-

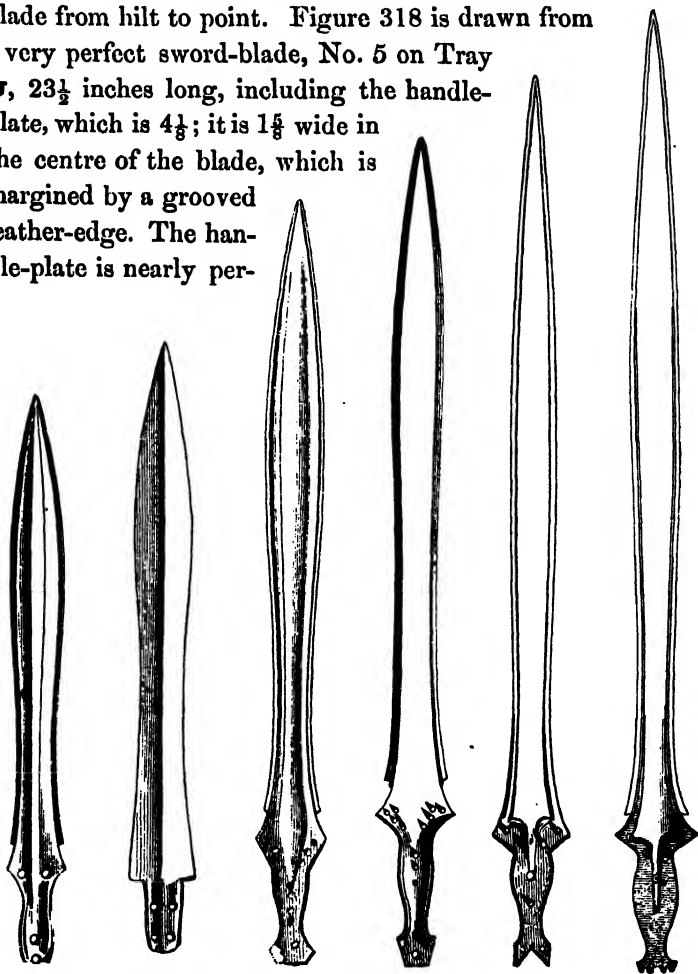


Fig. 316, No. 45. Fig. 317, No. 43. Fig. 318, No. 5. Fig. 319, No. 2. Fig. 320, No. 38. Fig. 321, No. 40.

fect, and perforated with four rivet-holes for the attachment of the bone or horn sides to. There are also several indentations where the metal ran into the rivet-holes in casting. It is deeply

notched for fixing the hilt to the blade. The edges of this, and most other swords in the Collection, are remarkably sharp, and of the finest temper. Fig. 319, from No. 2, on Tray **U**, is a very perfect specimen of long leaf-shaped sword, without mid-rib, but having a narrow grooved feather-edge with a ribbing running round the margin of the blade, except where deeply notched for the hilt; the handle-piece is thin and flat, enlarged at the small extremity for the attachment of the pommel, and perforated with twelve small rivet-holes, in nine of which the bronze pin-like rivets still remain. It is 26 inches long by $1\frac{1}{2}$ across the widest portion of the blade, and $2\frac{3}{8}$ at the junction of the handle-plate. Fig. 320, from No. 38, on Tray **V**, shows the still further decrease in breadth, and increase in length of the blade, which is surrounded by a bevel edge. It is beautifully cast, and is one of the longest perfect swords of its kind in the Collection, $28\frac{1}{2}$ inches long, with eight rivet-holes in handle-plate, in five of which the stout bronze pins still remain. It is said that when this sword-blade was found in the county of Limerick, about twenty years ago, a portion of the gold mounting was attached to the handle-plate.* Fig. 321 is drawn from No. 40, on Tray **V**, the longest and one of the most perfect sword-blades of this description which has been discovered in Ireland. It is $29\frac{5}{8}$ inches long, of which the blade is $26\frac{3}{4}$, and $1\frac{3}{8}$ broad. It is a beautiful specimen of ancient casting, having a keen edge, and a raised rib on the inner margin of the bevel; the blade is deeply notched above the handle-plate for catching the metal hilt: there are five rivets in the broad handle-plate, with counter-sunk extremities, as if for holding jewels or enamel. The total number of leaf-shaped swords of both descriptions, either perfect or fragmentary, on Trays in the Collection, is 90.

While the foregoing illustrations afford us a clear idea of

* See Mr. Clibborn's letter, signed H., in "Saunders's News-Letter," for 1st January, 1850.

the best-marked varieties of these two forms, there are some exceptions worthy of note. Figure 322 is drawn one-half the size of the original, from a portion of the fragment of a curiously decorated blade, $4\frac{1}{2}$ inches long, placed as No. 275, in Rail-case O. The sides are symmetrical, and the raised lines and circles formed in casting are in strong relief. It is the only specimen of its kind yet noticed in Ireland, and may have been a sword of office. The only article on which we observe any approach to the same form of decoration is the small narrow rapier sword, No. 67, on Tray X, in which a row of minute elevated rings extends along the projection of the midrib from the centre towards the point. No. 80, on Tray Z, $22\frac{1}{2}$ inches long, is a unique sword-blade of the long iris-leaf variety, curved edgeways like a Turkish yataghan.* It is said to have been found with several others on an ancient battle-field in the Co. Westmeath. It is scarcely possible that this curve could have arisen from a defect in casting; if caused by fire subsequently, the bend is much more likely to have been towards the flat of the blade, in which manner those bronze swords, evidently subjected to great heat, warped, and of which No. 77 is a notable example. If not originally formed of this shape, it is difficult to understand by what force, either accidental or designed, this scimeter-form could have been given. Without, however, expressing a decided opinion on the subject, it is worthy of remark that in the Book of Rights, already frequently referred to, we read of both "curved swords of battle" and of "curved narrow swords."

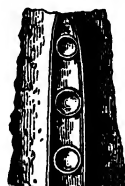


Fig. 322. No. 275.

Some of the leaf-shaped swords had been broken, and were in former times welded, both by fusion and by the addition of a collar of the metal, which encircles the extremities of the fragments, and of which we have good examples in the handles of

* The handle of this and Nos. 40 and 79 resemble one another so closely as to lead at first sight to the belief that they are duplicates; but such is not the fact.

Nos. 27, 50, 57, and 81. In other instances the fragments have been joined either by brazing or with spelter; the junction in many of the former, and all of the latter, is evidently modern.

The four next illustrations represent the *Broad triangular* and the *Long narrow Rapier swords*, tapering from the hilt to the point; with a thick central ridge; no large handle-plate, but, in lieu thereof, a thin sudden expansion of the blade, which was attached to a cast-metal handle, probably formed of one piece, and to which it was affixed by two or more strong rivets burred over it. In many instances the handle-plate was only notched for the passage of the rivets; and in some it was both notched and perforated, as shown in the accompanying illustrations. Fig. 323, No. 152, on Tray CC, is one of the smallest, but at the same time a very fine specimen of the broad-handled triangular rapier-shaped short sword; 12 inches long by $2\frac{1}{2}$ across the handle-plate, which is very wide compared with its other proportions; a well-cast midrib runs up the centre. It is very sharp-pointed, and only $\frac{5}{8}$ ths of an inch wide across the middle of the blade. The metallic handle of this weapon must have had four rivets; two held the blade in its place by means of notches, and two—which still remain—fastened it by passing through apertures. It was found in the River Barrow. Fig. 324, drawn from No. 62, on Tray X, represents a very beautiful short, broad, triangular blade, with both cast and engraved ornaments on each side; $10\frac{3}{4}$ inches long by $2\frac{3}{4}$ wide. It is complete, but fractured near the point, and has four very large rivets *in situ*, the two inside ones are each five-eighths of an inch long, and the outer ones somewhat shorter, as if to accommodate themselves to the curve of the massive metal handle; the ornamentation across the base of the blade is graven in the same manner as that on the gold articles in the Museum. It was—*Presented by the Shannon Commissioners*. No. 63, on Tray X, is another very beautiful blade of the same class, and is similarly ornamented. Fig. 325, No. 65, on Tray X, $15\frac{3}{4}$ inches long, and $2\frac{1}{2}$ wide

in the broadest portion of the handle-plate, has two large short rivets still remaining. It was obtained from Keelogue Ford and—*Presented by the Shannon Commissioners.*

Figure 326, No. 106, on Tray **AA**, is a beautifully cast specimen of the long rapier variety, thin, slight, and exquisitely sharp at both bevelled edges and at the point, with a flat midrib bifurcating below; 19 inches in length by $2\frac{1}{8}$ wide across the handle-plate, in which



Fig. 323, No. 152.

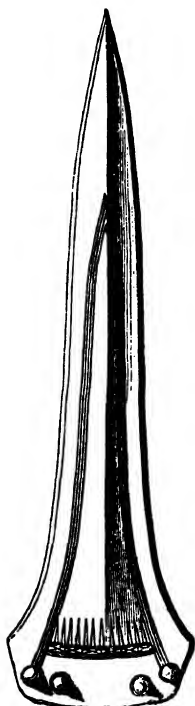


Fig. 324, No. 62.

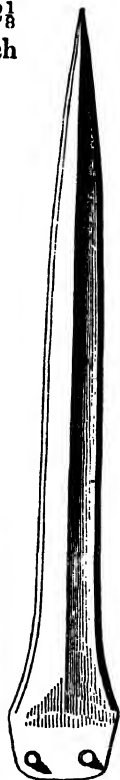


Fig. 325, No. 65.

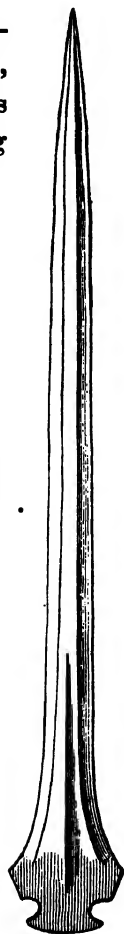


Fig. 326, No. 106.

there are two semicircular notches for catching the rivets. It was found in the parish of Killeshandra, county of Cavan, and—*Presented by the Board of Works.* The largest perfect specimen of this variety of blade is No. 104.

The total number of sword-blades of both descriptions—the broad triangular and the long narrow rapier—now in the Academy, amounts to 35; but as all the sword forms merge gradually, first into short weapons for close combat, and then into the most diminutive dirk or stiletto, it is difficult to draw any precise line of demarcation between the sword and the dagger. This easy transition from the longest sword to the dagger of the same form;—the fact that no two of these weapons are duplicates, or were cast from the same mould;—as well as the circumstance of the very great variety of such weapons in this collection, lends support to the belief that there was an extensive manufactory of such articles in Ireland in very remote times. Before considering the question as to the mode of hefting, it is proper to describe the third variety, or the—

Broad Scythe-shaped Swords;—which are specially and peculiarly Irish, now amounting to as many as forty-one specimens, have been (except No. 271) arranged on Trays **FF**, **GG**, and **HH**. Thick, heavy, round-pointed, averaging 12 inches in length by $2\frac{1}{2}$ broad at the base, and generally furnished with from two to four, and even more massive rivets, they must have been—whether attached to short metal handles for use in close combat, or affixed either spearways, or, like axes, to long wooden staves—most formidable weapons. Several of these are curved, and, as many are formed either out of red bronze or pure copper, it is probable that, like the celts of that material, they are of immense antiquity. They are all of a very dark colour, except such as are very thin, and made out of tin-alloyed metal. Some are thin and perfectly flat, except at the bevelled edges, as Nos. 232, 233; but the great majority have thick flat central stems or midribs, rising from the broad thin expansion of the blade for insertion into the cleft of the handle, but at top following the curve of the pointed outer edge.

Of the entire, 22 are of the true curved scythe-shape;

and these have all strong central elevations to afford additional strength. Although the points of some have been broken off, none of these blades are hacked or indented on their edges, showing that they were principally used for stabbing. The notion as to their having been attached to the sides or axles of chariots, like those attributed to Boadicea, derives no proof from an examination of these in the Museum of the Academy. The immense rivets, some an inch and a half in length, and nearly an inch across the burr, show that they must have been attached to massive metal handles; but as yet no fragment of any such has come to light. Like the two former varieties, they lessen in size until we find the form repeated among the daggers. The following woodcuts, most of which are drawn one-sixth the size of nature, present us with the best-marked varieties of this very remarkable ancient weapon. Fig. 327, from No. 232 on Tray **FF**, of yellow metal, very thin, in good preservation, and round at point, has a narrow bevel surrounding the edge, and four rivet-holes, in one of which the stud-like rivet still remains. It is $12\frac{7}{8}$ inches long, by $2\frac{3}{4}$ wide across the handle portion, and $1\frac{1}{2}$ within an inch of the point. It was found in the county of Longford, and—*Presented by Dr. D. Kelly*. Fig. 328, from No. 248 on Tray **GG**, shows another form of the short, straight, scythe-shaped sword, thick and massive, slightly defective on both edges, with a strong oval midrib, a deep triple groove surrounding the margin, and three massive rivets, the head of each of which is nearly an inch across. It is $11\frac{1}{4}$ inches long, by $2\frac{7}{8}$ wide. The two next illustrations show the curved form of this weapon. Fig. 329, from No. 240 on Tray **GG**, smooth, dark-coloured, having a grooved feather-edge, and stout central stem like the foregoing, has also three rivet-holes in the handle-plate, in two of which the massive studs remain. It is 16 inches long, by $3\frac{3}{4}$ broad at the handle, and $2\frac{1}{2}$ in centre of blade; and was found with the six others following on this Tray, points downwards, $2\frac{1}{2}$ feet under the surface of a shallow bog, in making

the railway at Hillswood, near Woodlawn, parish of Kilconnel, county of Galway, in 1850. It was—*Presented by G. W. He-mans, C. E.* (see Proceedings, vol. iv., p. 565). Figure 330, drawn to a larger scale than the foregoing, from No. 271 in

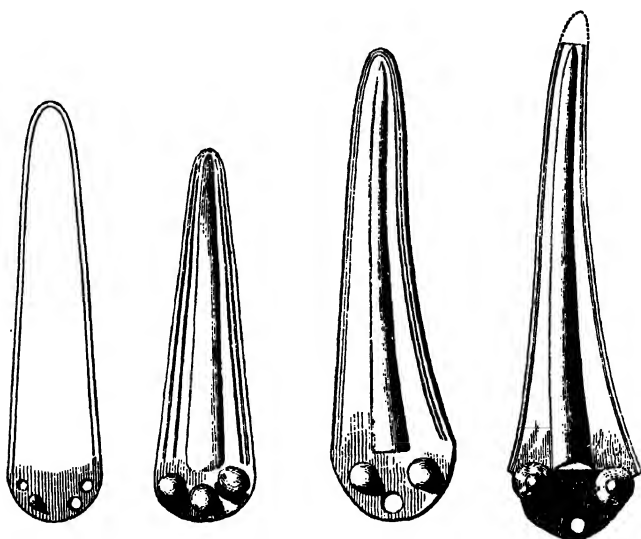


Fig. 327, No. 232.

Fig. 328, No. 238.

Fig. 329, No. 240.

Fig. 330, No. 271.

Rail-case **O**, is another specimen of the same type, narrower towards the point, which is slightly defective. In other respects it resembles No. 240, and, when perfect, was nearly 15 inches long. It is $3\frac{3}{4}$ inches broad across the handle-plate, and $1\frac{3}{4}$ measured over the middle of the blade. It has three rivet-holes, in two of which the rivets remain, and differ from all others in the Collection in having large conical washers each $1\frac{1}{4}$ inch wide, between them and the blade. A similar form of rivet has been observed in some of the short bronze swords found in France and Germany. This blade has been—*Deposited by the Royal Dublin Society*. In a thin, flat, straight specimen, No. 233 on Tray **FF**, like Fig. 327, there are no less than five perfect, and two incomplete rivet-holes, some of which would appear to have been cut at different times

from the others,—possibly to strengthen the blade in the handle, or to re-adapt it to a new one.

Sword Moulds, except one now in Trinity College Museum, have not been found in this country; it is, therefore, questionable how our swords were made, but many were probably cast in sand. On the continent they are equally scarce, but a few instances of such articles having been discovered in England,—these now in the British Museum, and described in the *Archæological Journal*, vol. ix. p. 185. Models of these two English stone-moulds have been—*Presented by Lord Talbot de Malahide*, and will be found in the lower compartment of the central glass-case, Bronze III., Nos. 300 and 301. They were used for casting the narrow rapier variety, and have no marks for rivet-holes.

In the accompanying cut is shown the wooden model of a sword 20 inches long, found five feet deep in Ballykilmurry, a bog near High Park, Co. Wicklow, which was—*Presented by James Westby, Esq.*, in 1850 (see *Proceedings*, vol. iv., p. 440). Near it was found some bog-butter, but no further indication to mark its age. Upon the side of the blade, and of a piece with it, there is a projection, as shown in the accompanying illustration. The use of this article is conjectural: if a toy,

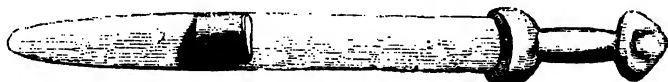


Fig. 331, No. 234.

this raised portion would be an inconvenience; but if a model for a sand-mould, the metal might have been poured in through the aperture left by this projection. Not the least curious portion of this implement is the handle, which resembles some of the single-piece bronze sword-handles observed in different parts of Europe. See Mr. Clibborn's *Exhibition Catalogue*, page 129.

Handles—such as were affixed to our Irish sword-blades—may be described under two heads. The first was made up of several pieces of bone, horn, tooth, or hard wood, and of

metal; and which hefted all the leaf-shaped swords with flat, narrow handle-plates. It was composed of at least four portions—the two sides of the former material, and the hilt and pommel, of the latter; besides the decorations formed of thin plates of gold,—all held together by slender rivets. As each part depended for its position on the integrity of the whole, it is manifest that it could not have lain in the earth or water for any length of time without destruction of the animal or wooden portions, and subsequent general disintegration of the entire. Very many centuries, indeed, must have elapsed since the most recent of our bronze swords was deposited in those situations where discovered during the last fifty years. This will, in part, account for the circumstance that no vestige of a single fragment of any such article has yet been noticed in Ireland. It is only by a careful study of a great number of sword-handles in different collections that the antiquary can form a probable opinion as to the mode of hefting such articles.* Great variety exists in the precise form of these handle-plates; most of the short broad-leaf swords, especially those on Tray **U**, terminate in straight T-like projections, while the ends of the long variety of the leaf-

* Among the vast collection of Scandinavian swords, there are very few examples of blades with flat handle-plates like these under consideration; and those of that description in the Royal Museum at Copenhagen, and having leaf-shaped blades, are, in all probability, Irish. In only one of these can any trace of the bone sides be detected. As we proceed northward, this special form of sword becomes scarcer.

In nearly all the Danish swords the handles were composed of metal, and consisted of a semilunar collar, or hilt, which came down on the blade, and formed a crescentic ornament, which must have abutted on the scabbard. Instead of a flat handle-plate, the blade ended in a long narrow stem or tang, over which was run down a series of rings, or an open-worked plate, sometimes decorated with gold or niello; in many cases the hilt and handle-piece were made in the one casting. The pommel, or terminal knob, cap-shaped, and of either a round, oval, or diamond form at the top, was perforated; the end of the tang being riveted upon it, held all firmly together. The interstices of the rings, or the thin open work, or spiral collar, which occupied the space between the hilt and pommel, was filled with terra-cotta or a mixture of pitch or resin and fine clay. Gold wire was, in some instances, wound round

shaped sword, as shown by those on Tray **v**, are either flattened out into thin square plates, as in No. 2, or cleft like No. 38, see p. 444. The number of rivet-holes is various, but generally consists of three sets, those in the lozenge-shaped enlargement, between the handle-plate and blade, and which served to fix the lunette metal hilt;—they vary from two to eight; those in the central portion of the plate—usually three—for holding the bone sides; and the end apertures variable in number, and sometimes wanting. To these there are a few exceptions, as in No. 43, Fig. 317, and those of that description where the handle was probably formed altogether of metal. In others, instead of rivet-holes, there were oblong apertures, as shown in the accompanying illustration drawn from No. 1, on Tray **v**.



Fig. 332.
No. 1.

In size as well as shape the handle-plates, when perfect, exhibit great diversity; and it is only after completing the handle, even in imagination, that we can form an opinion as to the magnitude of the space to be occupied by the closed hand. That they were very much smaller than those of modern swords with guards, and used for cutting as well as thrusting,

the handle, and even niello was employed. These swords are so faithfully depicted in that magnificent work, the *Atlas for Nordisk Oldkyndighed*, published by the Royal Society of Northern Antiquaries, and are also so well shown in the last edition of Worsaae's *Nordiske Oldsager*, as not to require further description. I am much indebted to the venerable W. Thomsen, of Copenhagen, for a small sword-handle answering to the foregoing description. Upon taking that article carefully asunder, it has afforded me still further instruction as to the mode of hefting the most common as well as the most beautiful variety of Danish sword. It is now among the collection of Scandinavian Antiquities in the Royal Irish Academy, where may also be seen another bronze handle of a sword or dagger, with a spiral middle piece. I am also indebted to M. Hildebrand, the able Curator of the Museum of National Antiquities at Stockholm, for drawings of such swords in that collection as were necessary for the elucidation of this subject.

Besides those mentioned above, there are, as already specified, a few blades with thin flat short handle-plates, of which No. 117, in the *Nordiske Oldsager*, resembles No. 43, in R. I. A., see Fig. 317, p. 444. In other Danish swords the flat handle-piece has a short stud-like tang at the end for riveting over the pommel; and in

there can be no doubt, yet some of them are large enough to receive a moderate-sized hand. Without discussing the generally received opinion that the men who used such swords had very small hands, like some of the Asiatics of the present day, the mode of using these weapons must not be forgotten:—they were employed for stabbing and fencing, in which the middle, ring, and little fingers alone grasped the handle completely, while the thumb and fore-finger passed upwards on each side of the blade, fitting into the curved hollows of the hilt—and not, like the method of the cavalry soldier of the present day, who, when about to deal a heavy blow, grasps his weapon with the closed hand, which must occupy a space of about four and a half inches. Among the Scandinavian swords there are several with handles longer than those of many modern swords; and it is remarkable that the size of the blade bears no proportion to that of the handle: some of the largest and heaviest having short though well-balanced handles.

The short swords and daggers were, moreover, probably held points downwards, with the thumb resting on the pommel, in the way in which the modern Spanish stiletto and the

some a sort of frame-work, or cradle, passed down over the sides of the handle, and held the bone or horn portions together. One of these cradles, recently discovered in Denmark, is covered with plates of gold, decorated with embossed circles, like those seen upon some of our oldest gold ornaments. The end, or pommel, of these flat-handled swords, consists of a thin plate, each end of which terminates in a spire turned inwards, and in some cases joined by a short bar. Such a pommel, fastened by two rivets, would specially suit those sword-blades in the Academy's Collection, Nos. 38 and 77, cleft and perforated at the extremity.

There are no swords in the Scandinavian collections corresponding to our long rapier variety, and, therefore, no handles cast of solid metal without a perforation; but there are a few broad triangular dagger-blades, with strong stout rivets, like those in our Collection, to which such handles would be applicable. The ornamentation upon all the true Danish swords is most distinct, and consists chiefly of the continued spiral so characteristic of early Danish art. In only one instance has a scabbard for a bronze sword been discovered: that specimen, found in sinking a foundation some years ago in the city of Copenhagen, is formed of wood covered with leather, and mounted with bronze.

Indian creese are used; and did not, therefore, require a greater space in the centre of the handle than could be encircled with the two middle fingers.

The handle-plates in our Irish swords are more frequently deficient than the points; and from the number of instances in which they were mended by welding, or having a collar or socket of new metal run round them, it is evident that this part of the weapon was particularly liable to accident, possibly from the want of that support afforded by the metallic rings, the composition within which gave lightness with stability and balance to the Danish swords. When fractured, the blade was again placed in a mould with the broken end heated, and fresh metal run round it: see also page 447. This addition, as we see in the cleaned specimens, is usually of a redder colour than that of the original, probably from containing more copper, in order to insure greater toughness. When the pommel was completed, the average length for the finger grasp was about three inches.

In some of the finest swords, principally those of the long leaf-shape, a triangular elevation, swelling out at the base of the blade, passes down on the handle-plate. See, in particular, the beautiful examples in Figs. 318, 320, and 321, page 444, and the two fragments, Nos. 77 and 80, on Tray z. The side edges generally rise into slight flanges above the level of the handle-plate; and, judging by analogy, this is the place to which gold overlaying was adapted.

In reconstructing the handle, our greatest difficulty arises from the form of the pommel,—unless we adopt that afforded by the Celto-Scandinavian swords in the Copenhagen Museum, already described in the note at page 455. A metal framework, or cradle, including the terminal knob or boss, may have been employed in the formation of some of these handles, like that referred to at page 455, or those represented by the models of continental swords from the Mayence Museum, placed alongside the Danish collection. It certainly is

remarkable that as yet no portion of the metal fragments of such handles has turned up in Ireland. Several other minor particulars concerning the handles of bronze swords have been noted; and will be found in the detailed Catalogue of these articles.

Many of these sword-handles afforded work for the jeweller as well as the armourer. In the Book of Rights, already frequently referred to, we read of "a sword adorned with a gold hilt," forming part of the stipend granted by the King of Caiseal to the King of Deise;—and again, of "a sword with studs of gold." On the sword No. 38, Fig. 320, as already stated at p. 445, several remnants of the gold decoration were found. On a sword discovered in the Bog of Cullen, county of Tipperary, in 1748, and described by Governor Pownall in his article in the *Archæologia*, vol. iii, p. 362, it is said that on the handle-plate was "a thin piece of gold, which weighed twelve pennyweights nine grains." And in 1751 was also found "such another weapon, on the rivets of which was a plate of gold, which covered one side; at the end of which was a thing like the pommel of a small sword, with three links of a chain hanging out of it: all the gold together weighed three ounces, three pennyweights, eleven grains." Another similarly described weapon was found in 1753; and, adds Walker, "golden-hilted swords have been found in great abundance in this kingdom. The annalist of Innisfallen describes Brian Boroinhe, exhorting his soldiers before the Battle of Clontarf, with a crucifix in his left, and a gold-hilted sword in his right hand. Solinus relates that the Irish formed the handles of their swords from the teeth of large sea-monsters, which they polished to a most beautiful whiteness."—*See Memoir on the Armour and Weapons of the Irish*, page 118. In some specimens, as already stated at page 445, the extremities of the rivets are countersunk.

With respect to the second variety of sword-handle, for attaching to blades of the long triangular or rapier-shape, pro-

vided with stout studs or rivets, and broad nut-like burs or washers, we have less difficulty, as two such articles, each formed of a solid metal casting in one piece, have been discovered entire in Ireland, and are shown in the subjoined illustrations. Fig. 333 has been engraved, one-third the size, from a narrow, slender, small sword of the rapier variety, in the choice and valuable collection of Dr. Petrie, who has generously afforded the drawing from which this cut has been made. It is hollow in the handle, and open at the pommel end, where it probably had a bone stud, and now measures $21\frac{3}{4}$ inches in length, and 3 wide across the lunated hilt. It was found many years ago in the county of Tipperary. Fig. 334, drawn two-thirds the size of the original, represents a very beautiful short dagger, quite perfect in the handle portion, now No. 272, in Rail-case O, where it forms a portion of the deposit recently made with the Academy by the Royal Dublin Society; although belonging to the dagger variety of weapon, it is here introduced for the sake of explaining the construction of the handle.

It is highly orna-

mented, both in casting, and also by the punch or graver. The blade partakes of the character of the broad triangular weapons, figured at page 451. This article is now 6 inches long; the studs are riveted with conical washers.

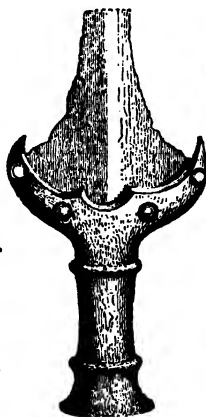


Fig. 333.

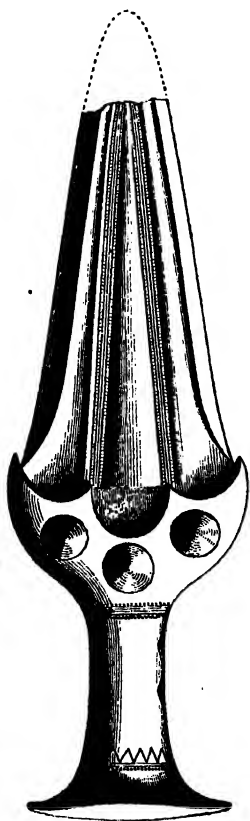



Fig. 334. No. 272.

Handles of the same description have been found attached to both Frankish and Roman swords, several fine specimens of which are now in the Museums of Mayence and Rouen. In those, the size of the handle is not always in proportion to the blade. The bronze mould, consisting of the two side-pieces and a core, recently found in Italy, and now in the Museum of Munich, was evidently employed for casting solid metal handles for swords of this third variety, which was very widely distributed throughout Europe. The same description of metallic, single-piece, cleft and riveted handles, were, no doubt, affixed to the majority of these broad blades on Trays **FF**, **GG**, and **HH**, some of which have been figured and described at page 451; but several of them were probably used as battle-axes, and hefted in the manner described at page 492. In the continental blades of this class the handle-grasp is straight and cylindrical; see the drawings and models of those in the Museum;* and they are fastened, not by two or three large studs, but by a semicircular row of rivets, sometimes ten or twelve in number.

Strange as is the circumstance that no remains of the separate metallic portions of the handles of leaf-shaped swords have been found in Ireland, it is still more difficult to account for the fact of so few of these solid handles—some of which must have been nearly an inch thick where crossed by the rivets—having been recovered. It would be absurd to suppose that these large blades had been adapted to wooden handles; for, independent of the discovery of metal hefts, for a similar description of implements, both here (see Figs. 333

* See, in particular, the full-sized coloured drawings from swords in the Rouen Museum, presented to the Academy by G.V. Du Noyer, Esq.; also the beautiful models of swords from the Mayence Museum, among the collection of casts recently procured by the Academy; see likewise Lindenschmit's Catalogue, referred to at p. 251. *Zweites Heft*, Tafel iv. Next to our country, Germany, France, and Switzerland, are the localities where such broad dagger-blades have been found in greatest abundance: see also *Mittheilungen der Antiquarischen Gesellschaft in Zurich*, B. i.

and 334) and on the Continent, the shape of the hammered-out burrs, or exposed ends of these massive rivets, shows that this must have been effected over metal apertures, like the rivets in a steam-boiler, and not on any substance less resistible than metal. These broad or triangular blades, straight and curved, have been arranged along with the swords with which they are assorted, and the daggers into which they finally merge, where these latter retain their form in a diminutive size.

The *Scabbard*, or sheath, in Irish, *Truail*, of these bronze swords was (as shown by the specimens found in Copenhagen) made of wood, covered with leather, and bound with bronze, having usually a four-sided ferule at the end, terminated by a circular button knob. Although the sheaths of iron swords of the Saxon and Danish periods have been found in England, no complete scabbard for a bronze sword has yet been discovered in the British Isles. All those articles belonging to ancient bronze swords have been arranged* in Rail-

 Fig. 335, No. 283.
 case O. The small ferule, No. 283, here figured one-half the natural size, is the extremity of the scabbard of an antique bronze sword of the rapier variety, and it corresponds with the one found in Copenhagen (see note p. 455); but it would only serve for the sheath of the narrowest-pointed blade. By the three following figures are represented articles which,

* Material having been taken as the basis of the primary arrangement of the Museum, many articles of the same species and variety must be grouped together, although differing widely in chronological order. Occasionally we meet with a combination of two or more different materials, as in the handles of stone and metal celts; the gut-tying of flint arrows in wooden shafts; the different substances used in the construction of harps; and the enlaying with enamel, and decoration with glass or jewels, pins, brooches, or other personal ornaments. Each article has, however, been arranged under that class of which the substance of its *principal* material was composed. Therefore, the fragments of brass handles or ferules of iron swords have not been enumerated in this section, although several are of considerable antiquity, but will be described under the head of Iron Swords and Daggers, &c.

there is every reason to believe, served as terminal decorations as well as ferules to the scabbards of our broad-leaved swords; although differing widely in shape, they were evidently used for the same purpose, are composed of a similar description of thin antique bronze, and were found under circumstances that leave no doubt as to their great antiquity. Figure 334, from No. 284, shows, the natural size, a small hollow capsule, indented and perforated above the convex edge, for affixing it to the end of the wooden sheath; “found in the railway gripe at Cloonmore, near Templemore.”—*Presented by the Board of Works*: see Proc., vol. v. page 417. In Fig. 337, one-third the size of the original, which is 4 inches long, the extremities are pointed and prolonged into a boat-shape. The indentations on the sides mark the overlapping of the wooden portion of the scabbard which was fastened to it by two slender rivets, so that the ends projected about an inch on each side. It was found in Keelogue ford, and—*Presented by the Shannon Commissioners*. In No. 288, Figure 338, which, although now slightly defective in one end, was originally $7\frac{1}{2}$ inches long,—we find the extremities prolonged still



Fig. 336. No. 284.



Fig. 337. No. 284.

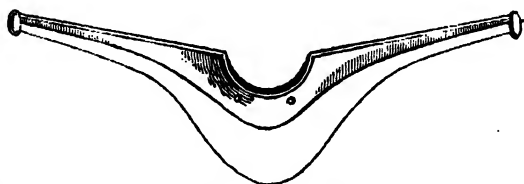


Fig. 338. No. 288.

further, and terminating in small buttons. These latter most probably projected 2 inches beyond the line of the scabbard, which possibly spread out at this part, like those of some Roman swords figured on ancient sculptures. There are two specimens of the second, and three of the third variety of this

description of ferule, in Rail-case **O**; see page 487. They are all exceedingly light, and of fine yellow bronze. When we reflect on the mode of suspending the ancient broad-leaf sword high up on the thigh, not like the modern trailing long sword, it will be seen that these projections would be less in the way of the wearer than might at first sight appear. The small crescentic piece of yellow metal, No. 290, described in the Proceedings, vol. vii., page 160, would also seem to have been a scabbard end, but for a different form of sword. The luncetted hilt raised over the level of the blade prevented the sword passing down too far into the scabbard.

DAGGERS,—serving occasionally as scians or knives, like the Highlander's dirk,—are, in use and generally in form also, but miniature swords; a great number, however, of the small bronze weapons in the Collection differ materially from the swords in their mode of hefting—being socketed like the spears. The dagger, in Irish, *Daiger* or *Scian*, as represented by the specimens in the Collection of the Royal Irish Academy, may be divided into five varieties, the blades of all which have their representatives among the swords.

1. The diminutive leaf-shaped and rapier-swords; the latter form reduced to only a few inches in length, and in breadth occasionally as narrow as the most slender modern stiletto, with broad, flat handle-pieces fixed in metal hefts by two or more rivets. The flat handle-plate is without apertures. Several such weapons may be seen on Trays **BB** and **CC**, of which the accompanying illustration, Fig. 340, is a good type. It is drawn from No. 156, which is 10 inches long, and only one-half wide in the middle of the blade: see details at page 480. Fig. 339, from No. 170, on Tray **DD**, is a leaf-shaped dagger-blade; $8\frac{7}{8}$ inches in length by $1\frac{5}{8}$ broad in the centre of the deeply grooved blade.



Fig. 339.
No. 170.



Fig. 340.
No. 156.

2. The broad triangular-sword form,—varies in shape from that represented, one-third the natural size, by Figure 341, from No. 249, on Tray **HH**, with convex edges,—to No. 190, on Tray **DD**, Fig. 342, a thin, angular blade, concave on the margin, and also drawn one-third the size of the original. The former, which is remarkably sharp-pointed, has a bevelled edge, and two stout rivets in the thin handle-plate; it is $6\frac{1}{4}$ inches in length by $2\frac{1}{8}$ broad; and No. 191 is almost a counterpart of it. The latter, of bright-yellow metal, is $4\frac{1}{2}$ inches long by 2 wide at the

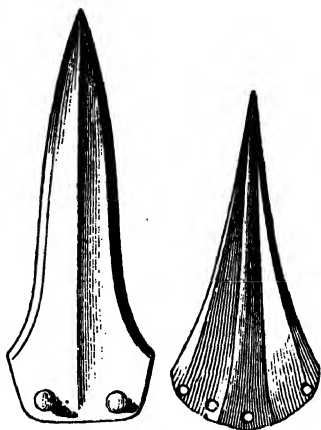


Fig. 341. No. 249. Fig. 342. No. 190.

base, has four rivet holes, and a broad, flat midrib. Of the same description of weapon are the three following illustrations. Figure 343, from No. 250, on Tray **HH**, is a small, thin, flat, angular dagger-blade, brassy in colour, with four small rivet-holes, and decorated all over the surface of the flat midrib with a series of dotted lines. It is $4\frac{7}{8}$ inches long by $1\frac{3}{4}$ in width; was found at Loughran's Island on the

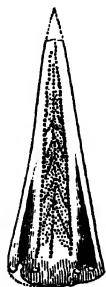


Fig. 343. No. 250.

Fig. 344. No. 259.

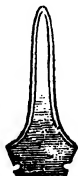


Fig. 345. No. 137.



Fig. 346. No. 274.

Lower Bann, and—*Presented by the Board of Works.* No. 159, on Tray **CC**, shown by Figure 344, is a triangular,

slender dagger-blade, one of the most perfect of its kind in the Collection, formed upon the model of the scythe-shaped swords in every respect, and showing how they were represented in miniature by the weapons of this variety. It is notched for rivets in the handle-plate, is rather thick towards the point, and is traversed by a broad midrib margined by linear elevations. It is $8\frac{1}{8}$ inches in length, and $1\frac{3}{4}$ across the base. The third illustration, Fig. 345, from No. 137, on Tray **CC**, is a rather remarkable and rare form of the short, triangular blade; perfectly flat, except the feather edge, and only $5\frac{1}{8}$ inches long by $1\frac{1}{4}$ across the base. It was—*Presented by Lord Farnham*. Of the same variety of triangular weapon is the dagger-blade, Fig. 346, from No. 274, in Rail-case **O**, with a metal handle-plate, terminated by an oval button; $7\frac{1}{8}$ inches long, and $1\frac{3}{4}$ broad. It has two apertures; the lower was probably for passing a rivet through, for fixing the lateral hefts of bone or wood. This unique and very ancient weapon was found deep under the surface of the ground in the Yellow River, townland of Creevy, near Ballinamore, county of Leitrim, and was—*Presented by the Board of Works*. Among the weapons of this variety, and of which it is a typical form, may be classed the beautiful perfect dagger with its metal handle, No. 272, figured and described at p. 458.

Besides the cast and graven decorations exhibited upon several of our short swords and daggers,

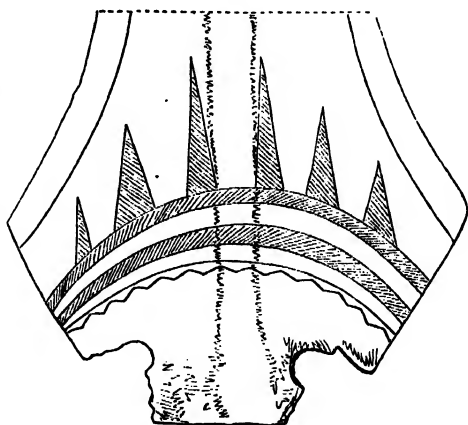


Fig. 347. No. 196.

as shown in several of the foregoing illustrations, the annexed cut, drawn the natural size, from No. 196, on Tray **DD**,

presents us with a form of ornamentation peculiarly Celtic, upon a short, broad, triangular dagger-blade, $6\frac{5}{8}$ inches in length.

3. The socketed variety—in which the metal portion formed about one-half the length of the handle, the pommel part being made of either wood, bone, or horn—numbers thirty-three, which are all arranged on Tray **EE**, from No. 199 to 231. In length they vary from $3\frac{3}{4}$ to $11\frac{1}{2}$ inches, and are well represented by the five following illustrations. They are nearly all leaf-shaped in the blade, into which the socket passes up for a short distance in many specimens. In shape the socket is either circular, oval, or quadrangular, and is in

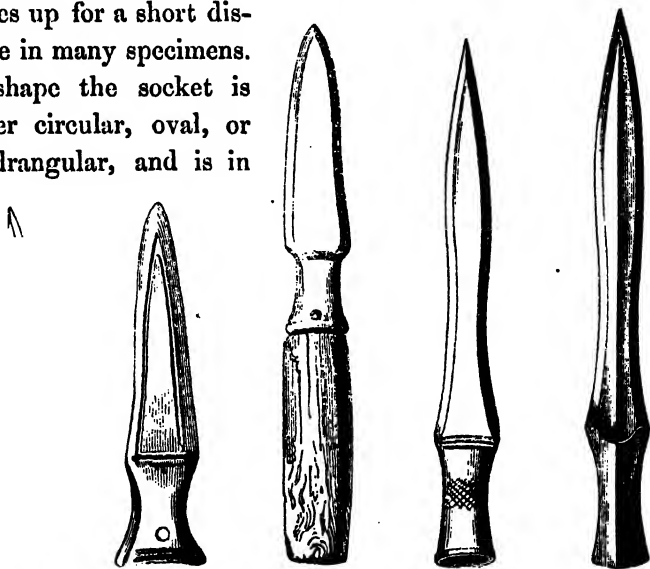


Fig. 348, No. 218. Fig. 349, No. 208. Fig. 350, No. 220. Fig. 351, No. 229. Fig. 352, No. 228.

many instances decorated either in the casting or by hand. The socket is traversed by a rivet, the apertures for which pass either from front to rear, or from side to side, as described in the details of these articles at page 483. Fig. 348, from No. 218, represents a socketed dagger of the simplest form, leaf-shaped in the blade, with bevelled edges; side rivets, socket compressed in the middle; it is $8\frac{3}{8}$ inches long;

was found in the Shannon, and—*Presented by the Shannon Commissioners*. Fig. 349, No. 208, is peculiar in shape, having an oval socket with a bell mouth and decorated margin, with a rivet-hole in front; the blade is triangular, with a deep groove running round it within the feather-edge; it is $5\frac{3}{8}$ inches in length. It was found sticking in a human skull in Drumona Bog, county of Armagh, in 1816. Fig. 350 presents us with a dagger-blade of somewhat the same variety as the foregoing, but less decorated, and found fixed upon an ancient yew handle in the Bog of Aughrane, near Athleague, county of Galway. It is $8\frac{1}{2}$ inches long, of which the blade is $4\frac{1}{2}$, and was—*Presented by Denis H. Kelly, Esq.* Figure 351, from No. 229, represents a very fine specimen of long dagger-blade with broad bevel-edge, and raised dice pattern on centre of socket; $10\frac{1}{4}$ inches long, and here shown one-fourth the natural size. It was found near Headfort, county of Galway, and—*Presented by J. M. St. George, Esq.* (see Proceedings, vol. vii. p. 274.) The last illustration, Fig. 352, drawn one-fourth the actual size, from No. 228,—long, narrow, leaf-shaped, with midrib and bevel edges, has a four-sided socket, ending in a lunated projection, like that of a sword-hilt. It is $10\frac{7}{8}$ inches long, was found in the river near the site of the old bridge at Banagher, and—*Presented by the Shannon Commissioners*.

4. This variety has only two representatives in the Collection, both of which are attached to Tray DD, and here shown one-sixth the natural size. Their distinguishing characteristic consists in the open-work metal handle, which is of a piece with the blade, and into which was probably inserted originally a decorated piece of bone, wood, or horn. The first, Fig. 353, is $9\frac{3}{4}$ inches long, of which the handle is $3\frac{5}{8}$; the blade, flat, with broad, bevelled edges, is $1\frac{3}{8}$ wide. It was found in the Dunshaughlin crannoge, and—*Presented by Mrs. Rothwell*, of Rockfield, county of Meath. The se-

cond specimen of this class, Fig. 354, is the finest example of the fourth variety which has been discovered, and has been long known to Irish antiquaries, having been figured and described by Vallancey in 1784 (see *Collectanea*, vol. iv., plate xi., fig. 4), who properly described it as “cast in one piece, the rivets being either ornamental or to stop against the top of the scabbard,” p. 61. Its total length is $11\frac{3}{4}$ inches, of which the handle is 4; the blade has broad, flat bevels, and measures $1\frac{1}{4}$ across its centre. The flat, central portion corresponding to the midrib in other specimens, is not similar on both sides. The casting of the inner edge of the handle-plate is very rude. This article was drawn by Beranger, and has also been figured in Gough’s edition of Camden’s *Britannia*, in 1789.

Fig. 353.
No. 167.Fig. 354.
No. 168.Fig. 355.
No. 166.

5. Consists of five specimens, numbered from 162 to 166 on Tray **DD**, with long sword-like metal handle-plates, having ridges or raised narrow flanges on each side, and terminating in thin, sharp, flat ends. These ridges were probably intended for affixing the handle-pieces of either animal or vegetable materials to. Figure 355, among the foregoing illustrations, is drawn from No. 166, the largest of these specimens, $10\frac{1}{2}$ inches long, by $1\frac{1}{4}$ wide, at the junction of the handle-plate with the leaf-shaped blade.

Most of the daggers, especially those of the short variety, served as knives for all the ordinary purposes of life, as well as offensive weapons. Of their sheaths we have no remains, except the leather one, No. 1, described at page 293. The following list of Trays furnishes the details of all the swords, daggers, and battle-axes in the Collection not specified in the foregoing descriptions.

WESTERN GALLERY.—BRONZE, II.

END CASE.—SHELF I., *Tray U*, contains nineteen bronze broad leaf-shaped sword blades, both long and short; numbered from 1 to 19. In size they vary from $17\frac{1}{2}$ to $26\frac{1}{2}$ inches, including the handle-plate, which in several specimens is imperfect. No. 1, a long and very perfect leaf-shaped sword-blade, rather narrow above the handle, with a central midrib; no side bevel; broad edges to handle-plate, which was probably covered with gold; and differs from all other specimens in the Collection except No. 94, on *Tray X*, in having longitudinal perforations instead of rivet-holes; it is $26\frac{1}{2}$ inches long by $1\frac{5}{8}$ broad in the widest part of the blade (see Fig. 332, page 454). It was found, with several other antique articles enumerated in the Proceedings (see vol. v., App., p. 64), "scattered over the hard bottom of Toome bar, on the Lower Bann, at the outlet of Lough Neagh, between the counties of Derry and Antrim, at a depth of from 1 to 3 feet under the surface of the sand; adjacent to Toome Castle on the Antrim side."—*Presented by the Board of Works*. No. 2, very perfect (see Proceedings, vol. iii., App., p. 90); figured and described at p. 444. No. 3, plain, smooth, a slight rib within margin, hilt cleft, nine holes in handle-plate; $24\frac{3}{8}$ by $1\frac{1}{2}$.—*Presented by F. W. Barton, Esq.* (see Proceedings, vol. v., p. 407). No. 4, of bright Dowris-coloured metal, smooth and narrow above handle-plate, which has four perforations; $23\frac{3}{4}$ by $1\frac{3}{4}$; found with Nos. 1, 10, 11, 16, 32, 37, &c., and—*Presented by the Board of Works*. No. 5, plain, except slight ridge parallel to edge; figured and described at p. 444; when found, the rivets were in the handle. Found at Kil-drinagh Ford, on the River Nore, near Borris-in-Ossory, Queen's County, with three other bronze swords, Nos. 48, 49, and 50, and two iron swords, two iron spear-heads, and three skulls, "within the space of 44 yards, resting on the hard gravel bed of the old river, with about one foot of loose material over them." The ford is in a direct line between two large raths, and other remains of ancient military works. At the ford were found the remains of a bridge of black oak.—*Presented by the Board of Works*. (See Mr. Frazer's description in the Proceedings, vol. v., App. p. 38). No. 6, deeply grooved and ridged on surface, peculiarly notched for hilt above

handle-plate, very sharp on edge, decorated with punched ornament; 23 by $1\frac{1}{2}$. No. 7, smooth in blade, seven holes in imperfect handle-plate; $19\frac{2}{3}$ by $1\frac{3}{8}$. Marked "Athy, county of Kildare." No. 8, plain, broad, curiously welded in blade by means of a collar which grasps the two portions; handle-plate imperfect; three rivet-holes; 22 by $1\frac{3}{4}$ (Dawson). No. 9, slightly curved in the blade, owing, perhaps, to a warp in casting; smooth, with a slight bevel surrounding the edge; handle imperfect; four rivet-holes; $20\frac{3}{4}$ by $1\frac{1}{2}$. No. 10, handle imperfect, notched for hilt, bevel edge, six rivet-holes; 20 by $1\frac{3}{4}$. Found with Nos. 1, 4, 11, 16, and 32, &c.—*Presented by the Board of Works.* No. 11, plain, slightly corroded, wanting handle; $19\frac{1}{4}$ by $1\frac{3}{4}$; found with Nos. 1, 4, 10, 16, and 32, &c.—*Presented by the Board of Works.* No. 12, perfect, slightly bevelled round edge, hilt notch, four large rivet-holes welded in centre, without intervention of a collar; $21\frac{1}{4}$ by $1\frac{1}{2}$. No. 13, complete, but fractured across handle-plate; narrow; handle curiously grooved and notched for hilt; narrow bevel round edge; contracted above handle-plate; eight rivet-holes; $21\frac{1}{4}$ by $1\frac{1}{2}$.—*Presented by the Shannon Commissioners.* No. 14, plain, broad in blade, handle-plate imperfect, four small rivet-holes; $18\frac{1}{2}$ by $1\frac{7}{8}$. No. 15, plain, slight hilt notch, handle-plate deficient, two rivet-holes; $17\frac{1}{2}$ by $1\frac{1}{2}$ (Dawson). No. 16, perfect, feather-edged, slight hilt notch, four rivet-holes in handle-plate; 21 by $1\frac{3}{4}$; found with Nos. 1, 4, 10, 11, and 32, &c.—*Presented by Board of Works.* No. 17, remains of dark lacquer on blade, handle short and grooved like No. 13; hilt notched; $20\frac{1}{8}$ by $1\frac{5}{8}$. No. 18, perfect, bevel-edged, five large rivet-holes, slight hilt notches; 20 by $1\frac{1}{2}$; found in Keelogue Ford, and—*Presented by the Shannon Commissioners.* No. 19, of peculiar shape, blade narrow in middle, hilt notches, handle-piece plain, four rivet-holes; $20\frac{3}{8}$ by $1\frac{1}{2}$; found in the river at Carrick-on-Shannon, county of Leitrim, and—*Presented by R. A. Gray, C.E.*

SHELF II.—Tray V, contains twenty-one sword-blades, chiefly of the long narrow variety, of the leaf-shaped pattern, but some are almost as short as daggers. In length they vary from $14\frac{3}{8}$ inches (including the handles, which average 4 inches) to $29\frac{2}{3}$; they have been placed horizontally, and are numbered from 20 to 40. No. 20, long and narrow, slightly beveled along edge, handle-plate broken; 22 inches by 1 in the widest part of the blade. "Found

on hard gravel, 5 feet under alluvium, in cutting new course for River Boyne, in townland of Rahin, Barony of Carbury, and county of Kildare."—*Presented by Board of Works* (see Proceedings, vol. v., App. p. liv.). No. 21, very narrow, like a modern sword blade, handle-plate defective; 19 by $1\frac{3}{4}$.—*Presented by the Shannon Commissioners*. No. 22, perfect, leaf-shaped, hilt notch, six apertures in handle-plate; $20\frac{1}{8}$ by $1\frac{1}{4}$.—*Presented by Lord Lorton*. No. 23, handle defective, blade fractured, sharp-pointed, strong midrib, two rivet-holes; $18\frac{1}{2}$ by $1\frac{1}{4}$, found at the Cutts on the River Bann, near Coleraine, with Nos. 36, 97, 124, &c., and—*Presented by the Board of Works* (see Proceedings, vol. v., p. 417. No. 24, polished, welded in two places, wants handle-plate, two rivet-holes; $16\frac{7}{8}$ by $1\frac{1}{2}$ (Dawson). Analyzed by Mallet as No. 8, who writes: "This specimen was made of a beautiful compact metal, very hard, and of a yellow colour, like that of No. 1 [celt No. 597, on Tray T, see p. 430], but a little deeper. Specific gravity, 8·819. It contains copper 87·07, tin 8·52, lead 3·37, with a trace of sulphur. No. 25, slightly imperfect at both extremities, welded in blade; $16\frac{3}{8}$ by $1\frac{1}{4}$ (Sirr). No. 26, complete, but fractured; notched for hilt; three rivet-holes; 19 by $1\frac{1}{4}$ (Sirr). No. 27, sharp-pointed, covered with ferruginous crust, handle-plate defective, five rivet-holes; 19 by $1\frac{1}{4}$. No. 28, complete, but fractured in blade; four rivet-holes, and raised longitudinal bars in handle-plate; $18\frac{3}{4}$ by $1\frac{1}{4}$; found in the county of Cork. No. 29, narrow, imperfect at both extremities, four rivet-holes in handle-plate; $15\frac{1}{2}$ by 1; "found 2 feet deep in hard clay and gravel, in excavation of Black River, townland of Clooncumbur, parish of Cloone, county of Leitrim."—*Presented by the Board of Works*. No. 30, short, narrow, edge slightly bevelled, handle-plate defective; $14\frac{3}{4}$ by 1; found in the county of Mayo (Dawson). No. 31, perfect, large, broad handle-plate cleft at extremity, eight rivet-holes, with six rivets remaining, grooved edges, cleft for hilt; $24\frac{3}{4}$ by $1\frac{1}{8}$; found at Keelogue ford.—*Presented by the Shannon Commissioners*. No. 32, perfect, point ground or worked down below level of blade for about four inches, broad handle-plate cleft for pommel, six rivets *in situ*; $25\frac{3}{8}$ by $1\frac{1}{8}$; found on Toome bar with Nos. 1, 4, 10, 11, 16, &c.—*Presented by the Board of Works*. No. 33, small-pointed; bevel-edged; imperfect in handle-plate, which is sunk below the level of the blade; nine rivet-holes; $24\frac{3}{8}$ by $1\frac{1}{8}$; found on rocky bed of Lough

Oughter, county of Cavan, and—*Presented by the Board of Works* (see Proceedings, vol. v., App., p. 60). No. 34, a fine perfect specimen, with broad handle-plate cleft at end; six rivet-holes; $26\frac{1}{2}$ by 1; found at Cootehall shoal on the Boyle Water, county of Roscommon.—*Presented by R. A. Gray, C. E.* No. 35, handle-plate defective, but having four rivet-holes; notched on side of blade; $23\frac{1}{2}$ by $1\frac{1}{2}$; found in 1847, about 3 feet under gravel deposit in bed of River Glyde, 1100 yards south-east from Derrycrammagh Ford, parish of Stabannan, county of Louth.—*Presented by Board of Works.* No. 36, perfect, except slight deficiency at end of handle-plate; bevel edges, six rivet-holes, $27\frac{1}{4}$ by $1\frac{1}{4}$; found at Cutts, near Coleraine, see No. 23.—*Presented by the Board of Works.* No. 37, complete, except handle-plate, which is brazed in two places; blade also welded in two places within half an inch of each other, the line of junction being scarcely discernible; bevel-edged, hilt notches, four rivet-holes; $26\frac{1}{2}$ by $1\frac{1}{4}$; found with Nos. 1, 4, 10, 11, and 16, &c., at Toome bar.—*Presented by the Board of Works.* No. 38, complete, but fractured in broad cleft handle-plate; eight rivet-holes, edge grooved and bevelled; see Fig. 320. No. 39, perfect, welded in centre of blade, slightly grooved and bevelled, hilt notches, handle-plate cleft, five rivet-holes; $29\frac{1}{2}$ by $1\frac{1}{4}$; found at Tumna on the Boyle water, Co. Roscommon, in the same townland with the hollow golden balls, of which there are six in the Academy's Collection, and—*Presented by R. A. Gray, C. E.* (See Proceedings, vol. v., App., p. 36.) No. 40, the largest and one of the most perfect sword-blades in the Collection, figured and described at page 444. See Fig. 321.

CENTRAL GLASS CASE, BRONZE III.—SHELF I., Tray W, contains fourteen sword-blades, chiefly of the broad leaf pattern, several being wider than most others in the Collection. In length they average nineteen inches, including the handle-plates, and are numbered from 41 to 54. The three first specimens are of a totally different character from any of the foregoing, both in the smoothness and great breadth of the blade, and the flat tang-like shape of the handle-plate, as represented by Fig. 317, on p. 444. No. 41 has been mended in four places, is smooth and flat, except the central midrib; it is $18\frac{1}{2}$ inches long, of which the handle-plate is $2\frac{1}{2}$, and is $1\frac{1}{2}$ broad in the widest part of the blade. No. 42, perfect, and similar to foregoing except in hilt-notches; $19\frac{1}{2}$ by $1\frac{1}{2}$. Found at Ath-

lone—*Presented by the Shannon Commissioners.* No. 43, ditto, of bright yellow bronze, figured and described at p. 444. No. 44, perfect, of bright yellow bronze, light bevelled edge, handle-plate slightly corroded and similar to those on Tray U, decorated with cast ornament, forming a high flange round its edges; hilt notches, six rivet-holes; 19 by $1\frac{1}{2}$ across blade; found in the county of Cavan, and—*Presented by Lord Farnham.* No. 45, perfect, except in handle-plate; figured and described at p. 444. No. 46, perfect, smooth, nearly flat in centre of blade, shallow hilt notches, seven rivet-holes; $19\frac{1}{2}$ by $1\frac{1}{2}$; found with No. 47 at Keelogue ford. Both were—*Presented by the Shannon Commissioners.* No. 47, a fine, perfect specimen, slightly bevelled edge, hilt notches; handle-plate decorated with raised bars, possibly for attaching the ornamental but perishable portions of the handle to, and welded at lower third; five rivet-holes; $20\frac{1}{2}$ by $1\frac{1}{2}$ (see No. 46). No. 48, double groove, bevel edge, hilt notches, handle welded, five rivet-holes; 18 by $1\frac{1}{2}$; found with Nos. 5, 49, and 50, on Kildrinagh Ford, in the old bed of the River Nore, and although now hacked and broken, they were then quite even and sharp, and in No. 5, all the rivets were found in the handle-plate—*Presented by the Board of Works.* No. 49, narrow bevel edges, hilt notches, four rivet-holes; $18\frac{1}{2}$ by $1\frac{1}{2}$ (see No. 48). No. 50, hacked on bevelled edge, handle-piece welded, hilt notches, five rivet-holes; $19\frac{1}{2}$ by $1\frac{1}{2}$ (see No. 48). No. 51, perfect, the broadest portion of the blade nearer the point than in any other specimen of this variety, hilt notches, seven rivet-holes; $18\frac{3}{4}$ by $1\frac{1}{2}$; marked "Killala, county of Mayo." No. 52, perfect, narrow, bevel edge, handle-piece welded, six rivet-holes, two of them not through, hilt notches; $18\frac{1}{2}$ by $1\frac{1}{2}$. "Found in the crevice of a rock in the Yellow River, near Ballyduff Bridge, drainage district of Ballinamore, county of Leitrim." (See Proceedings, vol. v., App., p. 59). No. 53, imperfect in handle, corroded, flat central midrib; $17\frac{1}{2}$ by $1\frac{3}{4}$ (Sirr). No. 54, perfect, plain, welded in centre of blade, four rivet-holes; $18\frac{3}{4}$ by $1\frac{3}{4}$ (Dawson).

SHELF I., Tray X, contains thirteen swords of different shapes, four being cleaned in order to show the colour of the bronze; numbered from 55 to 67. No. 55, a good specimen of the long leaf-shaped sword-blade, wanting a part of the handle-plate, where it is incrustated with an irony deposit, two rivet-holes, one rivet remain-

ing, slight cleft for hilt; 23 inches long, and $2\frac{1}{2}$ where the blade and shoulder-piece join.—*Deposited by Sir B. Chapman.* No. 56, a very fine specimen of the broad leaf-shaped sword; figured and described at p. 442. No. 57, a very graceful blade of leaf-shape, between the broad and narrow variety, slightly corroded all over like a frosting, exquisitely sharp on edge and point, slightly deficient at handle-plate, with about $2\frac{1}{2}$ inches welded to it, six rivet holes; $19\frac{1}{2}$ by $1\frac{1}{4}$. No. 58, long and narrow, quite perfect, but corroded on surface, cleaned to show bright yellow colour of metal, hilt notches, five rivet-holes; $21\frac{1}{2}$ by $1\frac{1}{4}$; found near Ardcarne Church, barony of Boyle, county of Roscommon.—*Presented by R. A. Gray, C. E.* No. 59, cleaned to show the beautiful and very bright golden colour of the bronze; a thick strong sword-blade of the long narrow variety, grooved on surface, very round in edge, hilt notch peculiar, handle slightly imperfect, seven rivet-holes; 18 by $1\frac{3}{8}$; found a short distance from one of the mounds near Dowth, county of Meath.—*Presented by W. Farren, Esq.* No. 60, cleaned to show the golden colour of the metal; a short leaf-shaped sword-blade, deeply grooved on surface; bevel edge, brazed with yellow brass above handle: cast handle-plate of a redder or more coppery colour, overlapping end of blade across first rivet-holes, and forming a collar round end of blade, three rivet-holes, slight hilt notch; 17 by $1\frac{3}{8}$. No. 61, fragment of a broad leaf-shaped sword, wanting point, handle-plate imperfect, four rivet-holes; $14\frac{1}{2}$ by $1\frac{1}{2}$ (Dawson). No. 62, a short, triangular sword-blade, figured and described at p. 448. No. 63, a beautiful sword-blade of the short, broad, rapier variety, highly ornamented both in casting and by the graver, handle-plate defective, a thick midrib; remains of seven rivet-holes as if it had been frequently mended; $14\frac{1}{2}$ by $2\frac{3}{8}$.—*Deposited by R. D. S.* No. 64, the short, thick, triangular blade of a dagger or small sword, mended, corroded on surface, two strong rivets, greatly resembling in handle-plate the specimen which follows; $13\frac{1}{2}$ by $2\frac{1}{2}$ across handle-plate (Dawson). No. 65, a very perfect blade, and in good preservation; a fine specimen of the short, broad, rapier variety, both large rivets remaining, thick angular midrib, narrow bevel edges; figured and described at page 448. No. 66, the lower fragment of a very beautiful, long, narrow rapier, and, probably, one of the largest of its kind, as it is

proportionably of much greater size than that figured and described at p. 442, which it greatly resembles in colour as well as shape; raised midrib and bevel edges, two thick rivets with very slight burrs; $13\frac{3}{8}$ long by $2\frac{7}{8}$ across handle-plate, see page 443. Judging of its original proportions by what now remains, this beautiful specimen must have been, with its handle, about 40 inches long. It was drawn by Beranger, and figured by Vallancey in 1784. See *Collectanea*, vol. iv., pl. 11, Fig. 10. No. 67, a perfect specimen of the long, narrow, rapier sword, handle-plate thin, bevelled at sides, tapering gradually from the handle to the point, ornamented somewhat like Fig. 322, see p. 448; two rivet-holes, one of them imperfect; 18 by $2\frac{1}{8}$ across handle, and $\frac{3}{4}$ in centre; found with five others in a bog, about two miles north-west of Ballymahon, townland of Mulawornea, and county of Longford.—*Presented by Dr. Kelly.*

SHELF I., *Tray V*, contains six sword-blades, some with modern handles, numbered from 68 to 73. No. 68, a beautifully shaped blade, complete, but fractured towards the long narrow point, slightly corroded, high central midrib, short thin handle-plate with four rivet-holes, in two of which the rivets remain; 21 by $1\frac{1}{2}$.—*Presented by the Shannon Commissioners.* No. 69, a perfect sword-blade, the antiquity of which has been questioned; the handle-plate may be comparatively modern, but the blade appears antique; it has a thick blunt edge, and two small rivet-holes; 20 by $1\frac{1}{4}$. No. 70, a perfectly smooth, and certainly modern sword-blade compared with the foregoing; believed to be a forgery, but perhaps of not so recent a date as is conjectured (analysis might determine the antiquity or modernness of the metal); nine rivet-holes; $19\frac{1}{2}$ inches long, including the handle-plate, which is 5, and $1\frac{1}{4}$ at widest part of blade. No. 71, a short, leaf-shaped sword-blade, fitted into a handle, ingeniously carved from the palm of a deer's horn, so as to form a very perfect cross guard; total length 21 inches; blade above handle is $15\frac{1}{4}$ by $1\frac{1}{4}$. This curious implement, which is one of the earliest donations to the Academy, was found in the county of Limerick, and—*Presented by the learned Sylvester O'Halloran* in April, 1788. (See MS. Minutes of Committee of Antiquities.) No. 72, a very beautiful long, narrow, leaf-shaped sword-blade, fastened into a straight yew handle by four small iron rivets, without a guard, and probably fashioned upon the style of the ancient sword-handle.

The last one and a half inch of top is curiously indented, as if by immersion in an acid, and thus resembling No. 32. The handle has been most ingeniously adapted to the blade; the whole implement is 25 inches long, of which the blade is $20\frac{1}{2}$ by 1 broad. No. 1, a short, broad leafed sword-blade riveted to an iron flange, ending in a tang, to which is attached a modern wooden handle, with a large hilt and guard like that of a cavalry sword of the present day; the bronze blade is $17\frac{1}{8}$ by $1\frac{1}{2}$. This implement was found in the county of Kerry, and—*Presented by Maurice O'Connell, Esq., M.P.*

SHELF II., Tray Z, contains twenty-one sword-blades of the leaf-shaped pattern, chiefly in fragments; numbered from 74 to 94. No. 74, fragments of a sword-blade and handle portion, with seven rivet-holes and two indentations, not through, hilt notches; $9\frac{1}{2}$.—*Presented by Lord Farnham.* No. 75, fragment of a leaf-shaped sword, ground to a dagger shape, handle-plate perfect; $7\frac{1}{4}$.—*Deposited by Sir B. Chapman.* No. 76, a fragment of sword-blade; $3\frac{3}{4}$; "found with No. 85 under about three feet of alluvial deposit, resting on limestone gravel, in the drainage cut through Brook Lodge Demesne, parish of Killeroran, barony of Tiaquin, county of Galway, in 1851."—*Presented by the Board of Works.* No. 77, the lower two-thirds of a very fine sword-blade, curled up on itself towards the handle, evidently from the action of intense heat; raised line within bevel edge. The handle-piece is very perfect, and resembles those of Nos. 40 and 80; perforated with eleven rivet-holes, that being the greatest number met with, except in No. 2; six of the rivets remain, and are countersunk like those in Nos. 40 and 80; hilt cleft like No. 38, said to have been found with Nos. 40, 80, and 84, and several other swords, upon an ancient battle-field near Athlone (Dawson). No. 78, fragment of a sword-handle with seven rivet-holes; 7. No. 79, small fragment of a sword-blade with peculiar handle-plate, examined by Mallet, but not described. No. 80, the curiously curved scimitar-shaped sword-blade, described at p. 446; welded in centre of blade, handle-piece defective, countersunk rivets like those in No. 77, but smaller; $22\frac{1}{2}$ inches long (Dawson). No. 81, lower fragment of a long narrow sword, handle portion welded and covered with ferruginous incrustation, two rivets; $9\frac{1}{2}$. No. 82, a fragment of a remarkable sword, differing

from all other specimens in the Collection, both in shape and form of handle-plate, the rivet-holes coming up on side of blade; $6\frac{1}{2}$. No. 83, the upper fragment of a narrow, leaf-shaped sword-blade, formerly supposed to have been part of No. 81, now placed before it; an examination of their sections will show the difference; (Dawson). No. 84, the upper fragment of a sword-blade, curved like No. 80, with which it was found, and which it resembles in the raised line within bevel edge; nearly 10 inches long. No. 85, fragment of a bright yellow broad sword-blade, found with No. 76, which see.—*Presented by the Board of Works*. No. 86, complete, but fractured in centre, much hacked on edge, four large rivet-holes; 19 inches long, found with No. 22, and—*Presented by Lord Lorton*. No. 87, complete, but fractured, nine rivet-holes; $15\frac{3}{4}$; marked "Killala, county of Mayo." Lower fragment drawn by Beranger; see p. 439. No. 88, a sword, defective in handle portion, and joined in two places by modern soldering; $15\frac{1}{4}$ (Dawson). No. 89, a complete leaf-shaped sword-blade, fractured, covered with iron incrustation, seven rivet-holes, and two indentations not through; $19\frac{1}{4}$; found at Kilbride shoal, on the Shannon, and—*Presented by the Shannon Commissioners*. No. 90, imperfect sword-blade, broken near handle; $14\frac{1}{2}$ (Dawson). No. 91, a bad specimen, long and narrow, modern soldering in centre, an incrustation of iron like that described at p. 394, covers the welded handle-plate; $17\frac{1}{4}$ (Dawson). No. 92, a curious piece of antique bronze, corroded, and composed of fragments of two different swords brazed together; $17\frac{3}{4}$. No. 93, a leaf-shaped sword, nearly complete, narrow handle-plate; 18 (Dawson). No. 94, the lower half of a sword, handle portion having one oblong aperture, like No. 1, broad side flanges, six large rivet-holes; $12\frac{1}{2}$; analyzed by Mallet as No. 9, and found to consist of 87·94 of copper, 11·35 tin, and traces of lead, zinc, and sulphur. (See Transactions, vol. xxii., p. 323.)

SHELF I., Tray **AA**, contains thirteen sword-blades of the long and short rapier variety, generally provided with large rivets for attachment to cast-metal handles, numbered from 95 to 107. These swords merge, gradually, into the smallest form of dagger, on Tray **DD**. No. 95, plain, triangular, tapering gradually from hilt to point, two imperfect rivet-holes; $12\frac{3}{4}$ inches long by 2 across the broad thin hilt-plate; found at Keelogue Ford, and—*Presented*

by the Shannon Commissioners. No. 96, another blade of the same character, bevelled, a thick stud remaining in one of the two rivet-holes; 12 by 2; found near the site of the old bridge at Banagher, between the county of Galway and King's County.—*Presented by the Shannon Commissioners.* No. 97 has a slight increase in the breadth of blade at the middle, which, with the handle-plate, looks like a transition from the leaf-shaped to the rapier variety; covered with smooth patina; two rivet-holes, one thick rivet remains; 11 by $1\frac{1}{4}$; found at Cutts, near Coleraine; see No. 23.—*Presented by the Board of Works.* No. 98, a bad casting, short, two rivet-holes; $9\frac{3}{4}$ by $1\frac{1}{4}$.—*Presented by Lord Farnham.* No. 99 increases slightly in middle of blade, which has been fractured and soldered; two imperfect rivet-holes; $11\frac{1}{2}$ by 2 (Dawson). No. 100, a short, leaf-shaped sword-blade, thin, flat, and slightly imperfect in handle-plate, worn above hilt notches; 14 by $1\frac{1}{8}$ across blade.—*Presented by the Shannon Commissioners.* No. 101, a fine blade of the same variety as No. 62, mended near the point, ornamented with four delicate raised lines, running between the midrib, and the side edges; three rivet-notches; $17\frac{1}{2}$ by $2\frac{1}{2}$ at base. No. 102, long, narrow, thin, smooth, sharp; two shallow notches, and two rivet-holes, with one very thick rivet; $18\frac{1}{2}$ by 2; found at Keelogue Ford.—*Presented by the Shannon Commissioners.* No. 103, slender, thin, long, narrow, and sharp, two rivet-notches, and central square aperture probably modern in hilt-plate; flat midrib; 19 by $1\frac{3}{4}$. No. 104, the largest blade of this description in the Collection, very thin, flat, and sharp on edges, broad flat midrib running entire length of blade, two large semicircular notches; $21\frac{1}{4}$ by $1\frac{1}{4}$, and $2\frac{1}{2}$ at base; found with two similar swords, also two bronze spears (Nos. 64 and 235) and a spear-head, and two dirks of iron, in the bed of the River Boyne, a mile below Stoneyford Bridge, townland of Moyfin, parish of Clonard, and county of Meath.—*Presented by the Board of Works.* No. 105, thin, slender, angular midrib, two large rivets, each $\frac{5}{8}$ ths long; $20\frac{1}{4}$ by 2 at base, and $\frac{7}{8}$ across centre of blade; found at Keelogue Ford.—*Presented by Shannon Commissioners.* No. 106, a very beautiful perfect blade, thin, slight, and exquisitely sharp both on edges and at point, midrib bifurcated towards handle, two semilunar rivet-notches; 19 by $2\frac{1}{2}$ at base, and 1 across centre of blade; this sword has been figured and described at page 448. No. 107, portion of

a very fine blade, wanting about 3 inches of top, and resembling the long rapier figured and described at p. 448; blade deeply grooved or fluted, stout midrib, remains of four rivet-holes; $17\frac{1}{2}$ by $2\frac{1}{2}$ at base, and $\frac{2}{3}$ across centre of blade.—*Presented by Shannon Commissioners.*

SHELF I., Tray BB, contains eighteen sword and dagger-blades, of the narrow rapier variety; numbered from 108 to 125. No. 108, a very small, thin dagger-blade; $7\frac{1}{2}$ inches long by $1\frac{1}{2}$ across the hilt-plate, and scarcely $\frac{1}{2}$ wide in blade. No. 109, a similar sword-blade, with thick midrib and shallow notches; $7\frac{1}{2}$ by $1\frac{1}{2}$; found in excavating Portna shoal, in gravel, bed of River Bann, on Antrim side.—*Presented by Board of Works.* No. 110, ditto, imperfect at point, two rivet-holes; 8 by $1\frac{3}{8}$ across hilt-plate; found at Athlone. *Presented by Shannon Commissioners.* No. 111, a defective, much corroded dagger-blade; 10 inches in length. No. 112, a dagger-blade, imperfect at top, two very wide rivet-holes; $10\frac{1}{2}$ by $2\frac{1}{2}$. No. 113, a remarkably thin, slender dagger-blade, scarcely larger than a modern metal skewer, $11\frac{3}{8}$ by $1\frac{3}{8}$ at hilt, and $\frac{2}{3}$ across middle of blade. No. 114, a very perfect, thin, narrow, rapier-blade; edge sharp, and in fine preservation, double notches in handle-plate; 14 by $1\frac{3}{8}$ at base, and $\frac{2}{3}$ across centre of blade. Procured from the neighbourhood of Strokestown, but whether from any of the crannoges in that locality is uncertain. No. 115, a small, rapier-shaped sword-blade, with thick midrib and two semicircular rivet-notches; $14\frac{1}{2}$ by $2\frac{1}{2}$. Found in the Shannon, and—*Presented by Shannon Commissioners.* No. 116, a very thin slight blade, corroded narrow hilt-piece, two small perfect rivet-holes; $15\frac{1}{2}$ by $1\frac{1}{2}$; “found in bed of River Corrib, at Newcastle shoal, town of Galway.”—*Presented by the Board of Works.* No. 117, a small, perfect rapier blade, with large rivet notches; $17\frac{1}{2}$ by $1\frac{1}{2}$ at base, and $\frac{2}{3}$ in blade; found at Keelogue Ford in 1843.—*Presented by Shannon Commissioners.* No. 118, a similar blade; $17\frac{1}{2}$ by $1\frac{1}{2}$, and $\frac{2}{3}$ in blade; found in bed of River Shannon, at Cornacarrow, near Jamestown, between the counties of Leitrim and Roscommon, in 1845.—*Presented by Shannon Commissioners.* No. 119, a small-sword rapier-blade, very thin, shallow notches, bent; $17\frac{1}{2}$ by $2\frac{1}{2}$ at base, and $\frac{2}{3}$ in blade; found at Athlone.—*Presented by Shannon Commissioners.* No. 120, ditto, rounded in handle portion, very shallow rivet-notches; 16 by $2\frac{1}{2}$ at base, and

$\frac{1}{2}$ in blade; found at Keelogue Ford. This, as also Nos. 121 and 123 were—*Presented by Shannon Commissioners*. No. 121, ditto, narrow handle-plate; 16 by $1\frac{1}{2}$. No. 122, ditto; 16 by $1\frac{1}{8}$, and $\frac{1}{8}$ in blade; found with swords No. 1 and others on Toome Bar, on the River Bann.—*Presented by the Board of Works*. (See No. 138.) No. 123, ditto, with thick, flat midrib; $15\frac{1}{2}$ by $1\frac{1}{4}$ in hilt, and $\frac{3}{8}$ in blade. No. 124, a rapier-shaped small-sword blade of bright-yellow metal, partially cleaned, broad hilt-plate, with two perfect rivet-holes; $14\frac{1}{4}$ by $\frac{5}{8}$, and 2 at hilt; found at Cutts, near Coleraine.—*Presented by Board of Works*. No. 125, a good specimen, very thin and sharp, thick midrib, notched for rivets; 14 by $1\frac{3}{8}$, and $\frac{3}{8}$; found in the parish of Killucan, county of Roscommon, near Carrick-on-Shannon.—*Presented by R. A. Grey, Esq., C. E.*

SHELF I., Tray CC, contains thirty-six bronze sword and dagger blades of different shapes and sizes, numbered from 126 to 161. No. 126, a thin, narrow, long, leaf-shaped dagger-blade; $6\frac{3}{4}$ inches long by $\frac{5}{8}$ broad.—*Presented by Lord Farnham*. No. 127, a narrow blade of the rapier shape, very slender, point imperfect, notched in handle-piece; $6\frac{1}{4}$ by $\frac{3}{8}$ wide in middle of blade; found in the townland of Lismoyle, parish of Tamlaght-O'Crilly, county of Derry. No. 128, a triangular dagger-blade, with battered edge and two incomplete rivet-holes; $6\frac{3}{4}$ by $1\frac{5}{8}$ above handle-plate (Dawson). No. 129, perfect, triangular; $7\frac{3}{8}$ by $\frac{7}{8}$ across middle of blade (Dawson). No. 130, leaf-shaped, rivet-notches; $6\frac{3}{4}$ by $\frac{7}{8}$ across blade; found with 134 at Keelogue Ford, and—*Presented by Shannon Commissioners*. No. 131, rapier-shaped, covered with incrustation, two rivet-notches; $6\frac{3}{8}$. No. 132, ditto, short and thick, notched; $5\frac{5}{8}$.—*Presented with No. 133 by Shannon Commissioners*. No. 133, leaf-shaped, thin, notched; $5\frac{1}{8}$ (see foregoing). No. 134, dagger-blade, fractured; $6\frac{3}{8}$ (see 130). No. 135, portion of dagger-blade, corroded, hammered at edge of handle-piece for fixing handle to; $4\frac{1}{2}$; found near Desertoghill Church, county of Derry. No. 136, a triangular dagger-blade, one edge serrated; $4\frac{3}{4}$ by $\frac{3}{4}$ across blade. No. 137, a remarkable specimen, of a very short dagger-blade, rapier-shaped, but very broad in handle-plate, two rivet-notches; figured and described at page 463. No. 138, rapier-shaped, round top, flat midrib, notched; $5\frac{3}{4}$; found with Nos. 1, 4, 10, 11, 16, 32, 37, 122, 147, and 184, on Toome Bar, and—*Presented by Board of Works*. (See No. 1.)

No. 139, ditto, slender, notched; $6\frac{1}{2}$ (Dawson). No. 140, leaf-shaped, thick midrib, two rivet-holes; $6\frac{1}{2}$. No. 141, ditto, ditto; $7\frac{1}{2}$ (Dawson). No. 142, ditto, rivet-holes incomplete; $7\frac{1}{2}$. No. 143, a corroded, sharp-pointed, broad, scythe-shaped dagger-blade; $9\frac{1}{2}$ by 2 in widest part. It and Nos. 144 and 145 came with the Dawson Collection. No. 144, the lower fragment of a rapier-blade, with rivet-notches; $8\frac{1}{2}$ by $\frac{7}{8}$ across blade. No. 145, a complete, thick, narrow, dagger-blade, bayonet-shaped on each side towards point, two small rivet-holes; $8\frac{1}{2}$. No. 146, rapier-shaped dagger-blade, corroded, two rivet-notches; $8\frac{1}{2}$. No. 147, ditto, wants point, two rivet-holes, one rivet; $8\frac{1}{2}$; found with No. 1, &c. (See No. 138.)—*Presented by the Board of Works*. No. 148, a rapier-shaped dagger-blade, thin, point fractured, notched in handle-plate; $9\frac{1}{2}$. No. 149, a short, broad, triangular dagger-blade, slight bevel edge, defective in thin, worn handle-plate; 9 by $1\frac{1}{4}$ at base; found in the Shannon.—*Presented by W. R. Wilde, Esq.* (See Proceedings, vol. vii., p. 162, No. 270.) No. 150, a long, flat, rather broad dagger-blade, fractured near the top, where it had been subsequently rudely mended, curved at base, two slight rivet-notches; $10\frac{1}{2}$ by 1 across middle of blade. No. 151, a broad, flat, triangular dagger-blade, slight midrib, two imperfect rivet-holes; 9 by $1\frac{1}{2}$ across base. No. 152, figured and described at p. 448; found in the River Barrow. No. 153, a small, triangular dagger-blade, very broad at the base, with two large rivet-holes; $5\frac{1}{2}$ by $1\frac{1}{2}$ at base; procured from a county of Limerick collection. (See Proceedings, vol. vii., p. 130.) No. 154, a triangular dagger-blade, imperfect at both extremities; $3\frac{1}{2}$. No. 155, a short, leaf-shaped sword or dagger-blade of bright-yellow bronze, deeply notched in handle-plate, compressed in width near point, edges exquisitely sharp; $11\frac{1}{2}$ by 1 across blade (Dawson). No. 156, a long, very narrow rapier-shaped dagger-blade; 10; found about 4 feet under surface in clay and gravel, townland of Kilcloughans, parish of Tuam, county of Galway.—*Presented by Board of Works*. See Fig. 340, p. 462. No. 157, ditto, two rivet-holes; $8\frac{1}{2}$.—*Presented (with No. 158) by Shannon Commissioners*. No. 158, ditto, broad in handle-plate, which is devoid of holes or notches; $8\frac{1}{2}$. No. 159, a dagger-blade of the scythe shape; figured and described at p. 463. No. 160, a very perfect, triangular dagger-blade, exquisitely sharp at point and

on edges, very shallow handle-notches; 9 by $1\frac{1}{2}$ across middle of blade, and $1\frac{1}{2}$ at base. No. 161, a triangular dagger-blade, fractured about the middle, remains of rivet-notches; $9\frac{1}{2}$ by $1\frac{1}{2}$ at base, and $\frac{7}{8}$ in middle of blade; found in Annagh demesne, county of Leitrim, three feet below the old bed of the river.—*Presented by Board of Works.*

SHELF II., Tray DD, contains thirty-seven dagger-blades of different sizes, varying in length from 3 to $11\frac{1}{2}$ inches, and numbered from 162 to 198. No. 162, a triangular dagger-blade, with a short elevated ridge running along each side of the handle-plate; $3\frac{3}{4}$ inches long by $\frac{7}{8}$ wide; this number commences a series of very remarkable specimens, of which No. 166 is drawn as the type of this variety. No. 163, perfect, and resembling the former in every respect, except size; $5\frac{3}{8}$.—*Presented by Shannon Commissioners.* No. 164, ditto, mended near centre, ridge on handle-plate oblique; $5\frac{1}{2}$. No. 165, ditto, rather larger, complete, and sharp-pointed; $5\frac{3}{4}$.—*Presented by Lord Farnham.* No. 166, the largest specimen of this peculiar variety, slightly grooved on surface; figured and described at p. 467. No. 167, a perfect bronze dagger, with open-work handle, all of one casting; figured and described at p. 467. No. 168, another and finer specimen of the same variety, also figured and described with foregoing. No. 169 appears to have been part of sword-blade, altered to dagger size, three rivet-holes, apparently drilled after casting, feather edge; $11\frac{1}{4}$ by $1\frac{3}{8}$. No. 170, figured and described at p. 462. No. 171, a very thin, flat, dagger-blade of the broad triangular variety, which may be classed along with the scythe-shaped swords, and resembles No. 232, figured on page 461. In the handle-plate are the remains of six rivet-holes, as in some of the Continental broad swords and daggers; $8\frac{3}{8}$ by 2 across base, and $1\frac{1}{2}$ in middle of blade. No. 172, a thin, flat, triangular blade, corroded at edges, and having lower portion prolonged into a tang for insertion into a horn, bone, or wooden handle. The slight narrow bevel on the edge is continued round the flat handle-plate, showing that the article was cast in its present condition, and not hammered out subsequently; $8\frac{1}{4}$ by $2\frac{1}{4}$. * Both this and the foregoing specimen were, probably, used as knives as well as daggers. It was purchased from Mr. Wakeman, and possibly came from Dunshaughlin. No. 173, a broad, flat

copper dagger-blade, with long handle-plate and two rivet-holes; $6\frac{1}{2}$ by $1\frac{1}{2}$. No. 174, thin, plain, flat, sharp-pointed; 6 by $1\frac{1}{2}$; found at Shannon Bridge.—*Presented by Shannon Commissioners.* No. 175, copper, flat, triangular handle-plate, forming an irregular lozenge with blade, one rivet-hole; 5 by $1\frac{1}{2}$. No. 176, a sharp-pointed dagger-blade, furnished with midrib and two rivet-holes; $4\frac{1}{2}$ by $1\frac{1}{2}$. No. 177, a sharp-pointed dagger-blade, notched in handle-piece; $7\frac{1}{2}$. No. 178, ditto, ditto, one perfect rivet-hole; 6 (Dawson). No. 179, ditto, rivet-notches; $5\frac{1}{2}$; found near Jamestown Bridge, on the Shannon, between counties of Roscommon and Leitrim, and—*Presented by Shannon Commissioners.* No. 180, sharp-pointed, one rivet-hole in flat tang; $5\frac{1}{2}$. No. 181, ditto, ditto; $5\frac{1}{2}$. No. 182, thin, flat, broad at handle-piece, one rivet-hole in tang; 5. No. 183, knife-shaped, thin, flat, sides nearly parallel, slight feather-edge; 5 by $\frac{5}{8}$. No. 184, perfect, knife-shaped, grooved in casting, slight, raised ridge on handle-plate, like No. 166; $4\frac{1}{2}$; found with No. 1, and others, on Toome Bar. (See description of No. 138, on p. 479.)—*Presented by Board of Works.* No. 185, thick, narrow, imperfect at point; $3\frac{1}{2}$. No. 186, very narrow blade, broad handle-piece, resembling No. 127, point broken, three rivet-holes; 4 by $1\frac{1}{2}$ at base, and $\frac{3}{4}$ across blade. No. 187, thin and flat, with tang handle, perforated with one rivet-hole; $4\frac{3}{4}$. This, and the two following, may have been used as ordinary knives. No. 188, ditto, ditto, $3\frac{3}{4}$. No. 189, ditto, thin, flat, two rivet-holes; scarcely 3 by 1. No. 190, very triangular, four rivet-holes; figured and described at p. 463. No. 191, ornamented in casting, two rivets; $5\frac{1}{4}$ by $1\frac{3}{4}$; resembles No. 249. No. 192, triangular, flat, two small rivet-holes; $5\frac{1}{2}$ by $1\frac{1}{2}$. No. 193, very narrow in blade, being only $\frac{1}{2}$ inch wide in the centre; $5\frac{1}{2}$ long, by $1\frac{1}{2}$ across handle-plate; resembles No. 195. No. 194, sharp-pointed, narrow handle-plate; $6\frac{1}{2}$ by $1\frac{3}{8}$. No. 195, perfect, thick flat midrib, rivet-notches; $6\frac{1}{2}$ by $1\frac{1}{2}$; found at Carnacarrow, near Jamestown, county of Leitrim, and—*Presented by Shannon Commissioners.* No. 196, a rapier-shaped blade with feather-edge, two rivet-notches; figured and described at p. 464. No. 197, rapier-shaped, sharp-pointed, broad handle-plate, two rivet-holes, one rivet; $6\frac{3}{8}$ by $1\frac{7}{8}$; found at Keelogue Ford.—*Presented by Shannon Commissioners.* No. 198, long and narrow, two rivet-holes, one incomplete; $7\frac{1}{2}$ by $1\frac{1}{2}$.

SHELF I. *Tray III.* contains thirty-three socketed dagger-blades; numbered from 199 to 231. In length they vary from $3\frac{3}{4}$ to $11\frac{1}{2}$ inches; and the socket traversed in all cases by rivet-holes, runs from 1 to $2\frac{1}{2}$ inches in depth. In twenty-two specimens the rivets passed from front to rear, and in all others (except 207) from side to side. No. 199, a spear-pointed dagger-blade, quadrangular in socket; 4 inches long. No. 200, broad in blade, feather-edged, compressed at neck of socket; $4\frac{1}{2}$; found at Keelogue Ford.—*Presented by Shannon Commissioners.* No. 201 wants point and margin of oval socket, compressed at neck; $4\frac{1}{2}$. No. 202, fragmentary, of bright-yellow metal, socket square, and $2\frac{1}{2}$ deep; now $3\frac{3}{4}$ long; found near Newry. Analyzed by Mallet, who has thus reported upon it:—"A good hard bronze, very like No. 8 [see sword-handle, No. 24] in colour and external appearance, and rather more malleable. It was scarcely tarnished. Specific gravity, 8·675." Its composition was copper 90·72, tin 8·25, lead 0·87. See Transactions, vol. xxii, p. 323. No. 203, spear-pointed, socket short, but passing for an inch into blade portion; $4\frac{3}{4}$. This specimen, together with Nos. 206, 210, 213, 216, 222, 224, and 227, were procured with the Dawson collection. No. 204, one of the most perfect miniature daggers in the Collection, socket round; $4\frac{3}{8}$ by $\frac{3}{4}$ across blade. Procured with No. 205 with the Sirr collection. No. 205, a short, broad blade, with round point, like a modern knife; $3\frac{3}{4}$. No. 206, spear-shaped, tapering from flattened socket to point; $3\frac{3}{4}$. No. 207, flat, wants top, socket short, no rivet-holes, decorated with a double ridge above handle portion; and a depressed line running round margin; $5\frac{1}{4}$ by $1\frac{1}{4}$. No. 208, another and more perfect specimen of the same variety; figured and described at p. 465. No. 209, of the same variety, blade flat, with feather-edge; socket oval; $5\frac{1}{2}$; found at Tubbercurry, county of Sligo. No. 210, thin, flat, leaf-shaped, socket oval; $6\frac{3}{8}$ by 1 across blade. No. 211, ditto, bevel-edged four-sided socket, with a narrow neck; $6\frac{1}{2}$; found in bed of the river at Carrick-on-Shannon, and—*Presented by Shannon Commissioners.* No. 212, ditto, fractured, leaf-shaped, socket oval; $6\frac{1}{2}$; found at Keelogue Ford. It and No. 217 were—*Presented by Shannon Commissioners.* No. 213, thin, flat, socket oval; $6\frac{3}{8}$. No. 214, small, narrow, oval-socket; $5\frac{3}{8}$. No. 215, a long sword-shaped dagger-blade, perfect, socket oval; $8\frac{1}{2}$. No. 216, leaf-shaped blade, with bevel edge, collar

round neck of oval socket; $7\frac{1}{4}$. No. 217, ditto, with midrib on blade, socket fractured, slightly corroded; $8\frac{1}{4}$. No. 218, perfect, of graceful form, surface irregular, figured and described at p. 465.—*Presented by Shannon Commissioners*. No. 219, ditto, almost a duplicate, socket circular, very large rivet-holes; 8.—*Presented by Lord Farnham*. No. 220, small socketed dagger-blade with wooden handle; figured and described at p. 465. No. 221, long, sword-shaped, with large oval socket; 9. No. 222, a very well-cast dagger-blade, slightly imperfect at top, smooth, and of the green colour seen on Roman bronze, blade leaf-shaped, grooved, socket quadrangular, and enlarged at juncture with blade; $8\frac{1}{2}$. No. 223, leaf-shaped, narrow, socket corroded; $7\frac{1}{4}$. No. 224, long, leaf-shaped, round pointed, socket four-sided, ending in bifurcated elevation at blade; 11. No. 225, a long leaf-shaped dagger; flattened socket, bifurcated like foregoing; $11\frac{3}{8}$; "found deep in a bog in the King's county."—*Presented by A. Molloy, Esq.* No. 226, leaf-shaped, compressed socket, ends in square elevation at blade; $11\frac{3}{8}$; found in bed of River Annalee, at Butler's Bridge, parish of Castleterra, county of Cavan.—*Presented by Board of Works*. No. 227, a large, perfect dagger, triangular in section of blade, with deep groove margining edge, like No. 207, socket, a compressed oval; $9\frac{1}{2}$ by $1\frac{1}{2}$ in widest portion. No. 228, a perfect dagger-blade, figured and described at p. 465. No. 229, another fine specimen, also figured and described at p. 465. No. 230, leaf-shaped, margin of socket concave, double cross rivet-holes; nearly 10 inches long. No. 231, leaf-shaped, short broad socket, ending in raised shoulder; $9\frac{3}{8}$; found in the county of Wicklow.—*Presented by Sir William Betham*. (See Proceedings, vol. i., p. 222.)

SHELF I., Tray FF, contains eight large, triangular, massive sword or battle-axe blades, coppery, most of them scythe-shaped, larger rivets remaining, except in No. 233; numbered from 232 to 239. No. 232, a thin, flat blade, described at p. 450 (see Fig. 327). No. 233, a fine specimen of the broad, flat, round-pointed blade, resembling in many respects the former, nearly straight on one edge and slightly curved on the other, flat midrib, five large, perfect rivet-holes, and remains of two others, as if it had been frequently re-handled, of reddish bronze; $12\frac{1}{2}$ by $3\frac{3}{8}$ above rivet-plate.—*Deposited by Sir B. Chapman, Bart.* (see also p. 451). No. 234, point broken, brazed in

centre, probably in modern times, thick, broad midrib, slight side bevels, much notched on edge, three holes, and two large massive rivets; $11\frac{1}{8}$ by $3\frac{1}{4}$. Marked, "Cavan; *Tuagh*, or war axe" (Dawson). No. 235, very perfect, slightly raised broad midrib, round point, double moulding within bevel edge; $11\frac{1}{2}$ by $3\frac{3}{8}$. No. 236, cleaned, copper, with the peculiar leaf-marks on surface, like the celts of the same material; perfect, slightly curved, rather pointed, broad midrib; three large rivets *in situ*; $12\frac{1}{8}$ by 3 (Dawson). No. 237, long, narrow, much curved, pointed, slightly defective on convex edge, thick midrib, three massive rivets; covered with iron incrustation; $13\frac{3}{8}$ by $2\frac{7}{8}$. No. 238, perfect, but rudely cast, nearly straight, differs from others in prolongation of handle-plate, pointed, no midrib, but side bevels, three rivets; $13\frac{3}{4}$ by $3\frac{1}{8}$. "Found in a bog in the county of Meath, in the year 1770." Figured by Beranger, see page 439. No. 239, curved, pointed, flat midrib, square at handle, and running into point at top, three thick rivets, each one inch long; $13\frac{5}{8}$ by $3\frac{3}{8}$.

'SHELF II., Tray GG, contains nine broad bronze blades, scythe-shaped, curved and riveted, with grooves and midrib; numbered from 240 to 248. All these, except the two last, were found together, as stated in the description of the first, given at p. 451, where that article is figured and described. No. 240, see Fig. 329, as stated above. No. 241, a broad, curved blade, wanting rivets, and somewhat broader in the handle-plate than the foregoing, grooved round margin; $15\frac{1}{4}$ by 4. No. 242, ditto, slender, narrow, rather pointed, three rivets remaining; $14\frac{5}{8}$ by $3\frac{3}{8}$. No. 243, ditto, slightly corroded, notched in handle-plate above rivets, which remain *in situ*; $13\frac{3}{8}$ by $3\frac{1}{4}$. No. 244, ditto, handle-plate shallow, one rivet remaining; 13 by $3\frac{3}{4}$. No. 245, short, notched in handle-plate, three strong rivets *in situ*; $11\frac{3}{4}$ by $3\frac{7}{8}$. No. 246, ditto, broad, appears coppery, both in colour and peculiarity of surface; $11\frac{3}{8}$ by $3\frac{1}{4}$. This was found together with the six foregoing in the county of Galway, as described above, and at p. 451. No. 247, nearly straight, a triple groove surrounds margin, two large rivets remain, each five-eighths thick below the burr; $11\frac{1}{2}$ by 3 in the widest portion of the blade. No. 248, straight, slightly defective in edge, a deep triple groove surrounds margin; three very large rivets, each nearly an inch wide across the burr; see Fig. 328, p. 451.

SHELF I., Tray III. contains twenty-two specimens of broad dagger-blades, battle-axes, and curved, scythe-shaped short swords, numbered from 249 to 270. No. 249, one of the best specimens of broad, double-edged, dagger-blade, figured and described at p. 463. No. 250, a thin, flat, angular dagger-blade, brassy in colour, wanting point, decorated; figured and described at p. 463. No. 251, flat, plain; very thin, three holes and two rivets, handle-plate strengthened by increased thickness of metal and square edges; $5\frac{1}{2}$ by $1\frac{1}{2}$. No. 252, ditto, slight feather-edge, four rivets and one imperfect rivet-hole; $6\frac{1}{2}$ by $2\frac{1}{2}$. Dredged from the Shannon above the new bridge at Athlone. No. 253, copper, a rude, much-corroded dagger-blade, slightly curved, wanting point; $5\frac{1}{2}$ by 2; found in the Shannon, and, with the foregoing—*Presented by Shannon Commissioners*. No. 254, flat, with slight ridge in centre, triangular, sharp-pointed, two small rivet-holes; $5\frac{1}{2}$ by $1\frac{1}{2}$ (Sirr). No. 255, flat, broad, round-pointed, notched on edge, narrow handle-plate, two rivets; 5 by $1\frac{1}{2}$ (Dawson). No. 256, copper, the most remarkable specimen of its kind in the Collection; figured and described at p. 489. No. 257, a bad, corroded specimen of the curved scythe-shaped blade, midrib, but no remains of rivet-holes; $9\frac{1}{2}$ by $2\frac{3}{4}$. No. 258, thin, broad, flat, rasped on surface, slight feather-edge, three rivets; $7\frac{1}{2}$ by $2\frac{1}{2}$ (Sirr). No. 259, a much-battered and corroded specimen of the small, curved, scythe-shaped blade, two incomplete rivet-holes, midrib, like those on Tray **FF**; $7\frac{1}{2}$ by 3 (Dawson). No. 260, another specimen of the curved, scythe-shaped blade, imperfect on concave edge, broad midrib, with square termination; covered with brown crusty oxydation, two rivet-holes; 9 by $2\frac{1}{2}$. No. 261, long, straight, narrow, imperfect on edge, sharp-pointed, rivet-holes incomplete; $10\frac{1}{2}$ by 2 (Dawson). No. 262, a curved, broad, scythe-shaped blade, incrustated with brown oxydation, a portion removed off the handle-piece for analysis; 10 by 3. Mallet describes this specimen as of "copper-coloured bronze of no great hardness; specific gravity, 8.404." Composition, copper 95.85, tin 2.78, iron 1.32, lead 0.12. (Transactions, vol. xxii.) No. 263, ditto, narrow, bent, covered with brown oxydation, broad flat midrib, two rivet-holes; $11\frac{1}{2}$ by $2\frac{3}{4}$; found at Keelogue Ford, and—*Presented by Shannon Commissioners*. No. 264, broad, thick, midrib ends short of point, three holes and one rivet; 11 by $2\frac{1}{2}$. No. 265, a much-

worn and corroded specimen of the curved, scythe-shaped blade, two incomplete rivet-holes; 12 by $2\frac{1}{2}$. No. 266, much corroded, point deficient, one perfect and two incomplete rivet-holes; $9\frac{3}{8}$ by $3\frac{3}{8}$. No. 267, a very bad specimen, much worn and corroded, narrow, covered with brown oxydation; three rivet-holes and one rivet; 9 by $2\frac{1}{2}$. No. 268, complete, straight, short, broad, two strong rivets, each an inch long, one incomplete rivet-hole; $8\frac{3}{8}$ by $3\frac{1}{8}$. No. 269, complete, a very good specimen; figured and described at p. 489. No. 270, broad, flat, imperfect in handle-plate, three rivet-holes, wide midrib; $7\frac{1}{2}$ by $2\frac{3}{8}$.

RAIL-CASE O contains twenty-nine articles chiefly appertaining to swords and battle-axes, and numbered from 271 to 299. No. 271, the massive, curved scythe-shaped sword, described as Fig. 330, p. 451. No. 272, the dagger-blade, Fig. 334, p. 458. No. 273, a fragment of the blade and metal handle of a small, narrow sword, with three rivet-holes, and a small portion of the open-work handle, now $1\frac{3}{4}$ long. This is one of the few examples of metal sword-handles ever found in Ireland. No. 274, a thin flat dagger, delineated in Fig. 346, p. 463. No. 275, a piece of decorated sword-blade, Fig. 322, p. 446. No. 276, a much-injured fragment of sword-blade. No. 277, the upper fragment of a sword-blade; $7\frac{7}{8}$ inches long; remarkable for its very high midrib and deep lateral cast ridges, in which respect it resembles some of the spears. No. 278 is a small fragment of sword-blade. No. 279, a small and very thin handle-plate of a rapier-sword, two rivet-holes and one short rivet. No. 280, a very small dagger-blade, with wide notches in handle-plate; $3\frac{5}{8}$; found in Lough Gurr. No. 281, a dagger-point. No. 282, a narrow dagger-blade, with high midrib and ridge on handle-plate, like No. 166; $5\frac{3}{8}$; found at Ballinderry. No. 283, the scabbard ferule figured and described at p. 460. No. 284, the small capsule for scabbard end, see Fig. 336, p. 461. No. 285, another and larger boat-like ferule of thin yellow bronze, apparently formed in one casting; $3\frac{3}{8}$ from point to point; found with the following article in Keelogue Ford, and—*Presented by the Shannon Commissioners*. No. 286, an article similar to the foregoing, but in much better preservation, and somewhat larger and heavier; figured and described at p. 461. No. 287, a specimen of the third

variety of scabbard-end, slightly defective at both extremities. The slender rivets which held the wooden portion of the implement are still *in situ*; it is now $5\frac{1}{2}$ long (Sirr). No. 288, another and somewhat smaller specimen, wanting about $1\frac{1}{4}$ inch of one extremity, but restored in Fig. 338, p. 461 (Sirr.) No. 289, a still larger specimen of this variety, wanting one of the button extremities; now $6\frac{1}{2}$, but must originally have been 8 inches in length. Procured from Mr. Wakeman. No. 290, the small crescent-shaped piece of bronze, probably the end of a scabbard, measuring $1\frac{1}{2}$ from point to point.—*Presented by Marcus Harty, C. E.*, and described in Proceedings, vol. vii., p. 160. No. 291, the wooden-sword model, described as Fig. 331 at p. 452. No. 292, a mixed-metal model of a leaf-shaped sword, resembling several of our Irish specimens; 22. Found with No. 293 in Northumberland, and—*Presented by Lord Talbot de Malahide*. No. 293, a metal model of a sword-blade and handle, found with the foregoing; from pommel to point it measures $21\frac{3}{4}$ inches. The pommel forms a horse-shoe-shaped decoration, precisely resembling some of those semilunar gold articles, with cupped extremities, in the Collection. No. 294, a model of the rapier figured at p. 442.—*Presented by Lady Staples*. No. 295, the bill-shaped blade or battle-axe, figured and described at p. 492. No. 296, the bronze tube, figured and described at p. 492. No. 297, this and the two following articles are the heads of battle-axes, the first of which is figured and described at p. 493. No. 298, another specimen, similar in length, but more slender in the socket, which is decorated with three raised fillets. It has only two sets of spikes, with four in each row; on the lower row one is deficient. It bears the following label: "Unique type of ancient Irish war-club from county of Galway." No. 299, a short implement of the same character; $3\frac{1}{2}$ inches long, covered with greenish patina, socket conical, and decorated with two fillets below the three sets of conical spikes, four in each set (Dawson). Found in the county of Roscommon. See Dublin Penny Journal, vol. ii., p. 20.

In bottom case, opposite Rail-case O, are placed the two double models of sword-moulds, referred to at p. 452, Nos. 300 and 301.

The BATTLE-AXE, *Tuagh-Catha*, or *Biail*,* usually of iron, was a highly esteemed weapon among the Irish in the middle ages; but neither in the Fenian romantic tale of the *Táin-Bó-Cuailgne*, nor in the Book of Rights, is any mention made of such an article. It is quite manifest that such short, blunt, round-pointed, spade-like implements, as these shown in the two following cuts, could not have been used for stabbing, or, if attached to handles merely intended for a finger-grasp, were not employed for cutting or hacking. They were, we believe, set at right angles, upon stout poles or staves, by means of metal collars, and thus converted into most formidable weapons, occupying a position among our ancient arms, midway between the bronze, hatchet-shaped celt, and the broad, scythe-shaped sword, which latter they resemble in the

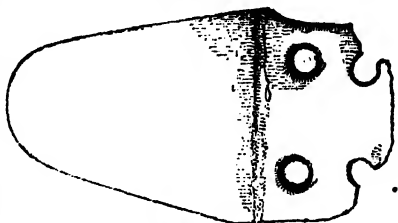


Fig. 356. No. 256.

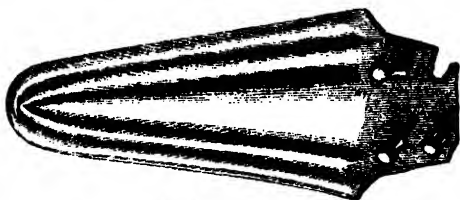


Fig. 357. No. 269.

form and mode of hefting, but partake somewhat of the nature of both. An antiquary, speculating on one or two isolated specimens of this implement, might be inclined to place it among the species Tools, or Agricultural Implements; but with such a Collection as that belonging to the Royal Irish Academy, in which we find so many examples of this pe-

* *Biail* is the word used by the Four Masters, under the years 1157, 1186, and 1218, to express a battle-axe; but it evidently refers to an iron weapon, which was probably analogous with the English "Bill," which Skinner considered to be the "*Securis rostrata*," or beaked axe, so called from its great resemblance to the bill of a bird; and certainly no article in this Collection bears a greater similitude to the beak of a gull than that shown by Fig. 359, p. 492. In Zeuss' *Grammatica Celtica*, *bíidil* glosses the Latin *securis*.

culiar implement of all sizes, from that of the undoubted sword-blade, already described, to a dagger not more than four inches long, it is impossible not to come to the conclusion that they belong to the species Weapon. In this article we have also an ample field for observing the process of artistic development, possibly spreading over centuries, as was already demonstrated in the examination of the celts and true swords. Their antiquity may be gathered from the fact of many being of copper, the use of which metal invariably preceded that of bronze. In the handle-plates they are much larger than swords or daggers, and have frequently four rivet-holes, placed in pairs on each side. No. 256, on Tray **HH**, Fig. 356, is a flat, short, spade-like article of copper, $5\frac{1}{2}$ inches long, and $3\frac{1}{4}$ wide; the blade is $3\frac{1}{2}$ in length, and, like most specimens of this variety, has a large, thick handle-plate for fixing it in a strong metal collar. Fig. 357, drawn one-fourth the size of the original, from No. 269, on the same Tray, measures 9 inches in length, by $3\frac{1}{2}$ broad, is strengthened by a stout midrib, like that in the swords figured on page 451, and is also deeply grooved on each side of that portion. It has four rivet-holes, placed in pairs, as in the former article, and not in a semicircle, as those of the sword and dagger-blades usually are. Three of the strong studs still remain. Some of the curved bills or scythe-like blades, already described, were, in all probability, affixed to long handles like modern halberts.

Heretofore these articles have been denominated "war-scythes," and vague notions have existed as to the way in which they were used, as already stated at page 450. Their precise use may now, however, be learned from the following:—In Holstein, Mecklenburgh, and Saxony, bronze implements, with blades similar to some of those now under consideration, have been discovered, and to these the German antiquaries have given the name of *Commandostab*,—a sort of military baton. Three of these have been figured in Wagener's

Handbuch der Alterthümer (Weimar, 1842), from Fig. 1281 of which is copied the accompanying illustration, in which the blade corresponds, in many respects, with several of those in the Academy, and of which Fig. 358 is the type. In the same work

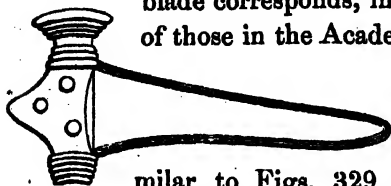


Fig. 358.

we find the curved variety, with a blade precisely similar to Figs. 329 and 330, also represented. In the Hill of Osterburg, in Saxony, where the article, here figured, was discovered, there were found along with it one thousand urns, several stone war axes (celts), and twelve oval metal disks, supposed by Wagner to have been attached occasionally to the Commander's staff, in signalizing. The handles were hollow tubes, strengthened by wooden staves, which projected below a considerable distance, and thus also added to their length.

Among the bronze articles heretofore unexplained in our Collection is a hollow tube, $24\frac{1}{2}$ inches long, and $1\frac{1}{4}$ in diameter, No. 296, in Rail-case O, with a moveable ring in the middle, and furnished with four circles of spikes (four in each row), two near the centre and one at each end, where the collars and rivet-holes show that it had been attached to other portions. Hitherto this article has been regarded as a portion of a trumpet, and would appear to be that figured as such in vol. ii. of the Transactions of the Academy, and described by Ralph Ousley, Esq., one of our earliest collectors of antiquities; it was found in the county of Limerick in 1787. The trumpets found along with it are still in the Academy, and are described under the head of musical instruments. During the past year another and very beautiful form of bronze battle-axe blade has been procured from the bog of Rock Forest, near Roscrea, in the county of Tipperary; it is $7\frac{3}{8}$ inches long, and $8\frac{5}{8}$ measured along the base, where it has two perfect rivet-holes and two notches, as shown in the accompanying illustration, the lower portion of which represents

the tube alluded to; the dotted line above marking its probable termination at top. It is possible, however, that the socket for holding the blade may have projected beyond the line of the shaft. This bill-axe, No. 295, in Rail-case O, is the only article of the kind, we believe, ever found in Ireland, and resembles in its flat surface and midrib the scythe-shaped blades on Trays FF and GG.

The fact that some of the broad blades on Tray GG were found together, as described at page 451, lends probability to the conjecture that they were battle-axes, wielded by a particular class of soldiers, and not the staffs of officers. In the warfare of the period they must have been most formidable weapons. Vallancey, who figured one of these curved blades in 1784, seemed well aware of its use as a *Tuagh Catha*, and said: "The great rivets of this weapon show it was mounted on a very strong shaft; it was an excellent weapon in the defence of an entrenchment."—*Collectanea*, vol. iv., p. 62.

Most of the articles of this description have been arranged on the three last Trays among the Collection of sword and dagger-blades, the details of which are given from pages 484 to 487.

BATTLE-MACES, or metal batons, from eighteen to thirty inches in length, and furnished with enlarged massive decorated heads, formed part of the usual weapons of the warriors of the middle ages, when they were constructed of iron, and generally hung at the saddle-bow. They were used in close combat, after the sword and lance had been thrown aside, or were cast from a distance, as graphically related by Scott in his description of the encounter between Richard Cœur de Leon and Saladin. In

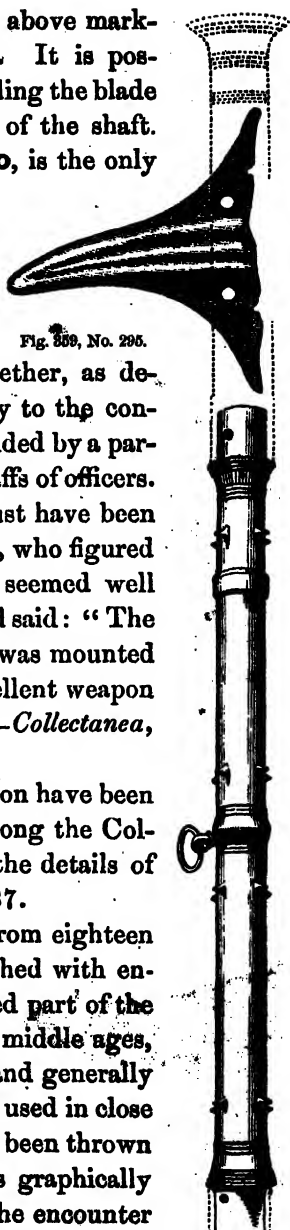


Fig. 359.
No. 295.

still earlier times, however, they consisted of hollow spiculated bronze heads fastened on wooden handles, and must have been very effective weapons in the warfare of the period. They are of very wide distribution, for there are few collections in north-western Europe in which we do not meet with some of them. In length they run from two to five inches, and are generally one and a quarter across the socket. There are three such articles in the Academy's Collection, numbered from 297 to 299 in Rail-case O: and of which, that here figured one-half the natural size, with three sets of spikes, six on each row, arranged on alternate spaces, is a good specimen. Each spike is lozenge-shaped at the base, and the upper ones curve downwards; it is $3\frac{1}{4}$ inches in length, and $1\frac{1}{2}$ at the bottom of the conical socket. It formed originally a portion of the collection of the late Mr. R. C. Walker, and was—*Presented by the Duke of Northumberland*, when he purchased that gentleman's collection.



Fig. 361. No. 297.

BRONZE IV. AND V.

SPEARS, JAVELINS, DARTS, BOLTS, and ARROW-HEADS, of bronze, in great variety, and of the most graceful forms, have been found in abundance in Ireland. Those in the Academy's Collection are arranged on two large Trays, **II** and **JJ**, in the northern extremity of the Western Gallery, and on five small Trays in the first compartment of the northern side of the ground-floor of the Museum, from **KK** to **OO**. The largest spear-head yet found in Ireland is 36 inches long (see the model of it in Rail-case **P**); but of the originals in the Academy, the length varies from No. 18, the central specimen on Tray **II**, which measures $26\frac{3}{4}$ inches, see Fig. 366, to

No. 136, on Tray **LL**, Fig. 38, which is only $1\frac{1}{2}$ inch long, and which specimen is the type of the majority of the small bronze bolts and arrow-heads.

The distinguishing characteristic in our Irish spear-heads is the loop or ear for securing them to the handles, and possibly for attaching tassels or other decorations to. This loop was gradually removed upwards from the side of the socket several inches below the blade, first up to, and then into the blade itself, which it lightened as well as ornamented.

Next to the sword, the arrow projected from the bow, the dart cast by the hand, and the spear driven against the foe, would appear to be the earliest weapons used in the warfare of all primitive nations, and were brought to great perfection in this island. Our collection of such articles is, undoubtedly, one of the most extensive in Europe, and amounts to as many as two hundred and seventy-six specimens. Although the generic term for a spear is *Sléagh* (probably a missile weapon), the word *Laighean* is thus noticed by Charles O'Connor in his *Dissertations on the History of Ireland*:—"After his return from his exile in Gaul, Labra-Loingseach brought the Lagean in use, a sort of broad-edged lance, from which the provincialists of Leinster derive the name of Laignidh, and their country, the name of Laighean."—page 67. The names of the agricultural implements known in the present day as the "slaine" and "loy" are probably derived from these terms. Besides the foregoing, the following words were used to designate spears, javelins, or darts—possibly of different shapes,—*manats*, now applied to a mason's trowel, which, in form, resembles many of our broad, leaf-shaped spear-heads; *cruiseach*; and also *fogha* [*faga* in MS. H. 2, 16, col. 42, T.C.D.], *gae* [the Gaulish *gaesum*], and *gabhal*.*

From the following circumstance, related in the *Táin-Bó-*

* See note afforded by Mr. Curry in Dr. Robinson's account of the Dowris Find, described in the Proceedings, R. I. A., vol. iv., p. 240. *Delenn*, *muirenn*, *carr*, *incne*, *enarr*, *celtair*, *slissen*, are also names for spears or javelins; *ruibhne*, *omna*, *ceis*, are given by Lhuyd as names for a lance.

Cuailgne, it would appear that the word *Clettin* was applied to the shaft of the bronze spear. Redg, the satirist laureate of Queen Meave, threatened to lampoon Cúchullain, who thereon cast his clettin at him, and striking him in the pole of the neck it passed out through his mouth, and killed him on the spot, at the "ford, which henceforth received the name of *Ath-Solom-Seoid*, or the Ford of the Ready Gift [in Louth]; and its bronze head was hurled from off the clettin upon the stream, whence it is called *Umhan-Shruth* [Bronze Stream] ever since."*

For the sake of arrangement, the spears and darts, &c., may be divided into four varieties:—1. The simple leaf-shaped, either long and narrow, or broad, with holes in the socket for passing the rivets through which fixed it in the handle. 2. The looped—with eyes on each side of the socket below, and on the same plane with the blade—generally of the long, narrow, straight-edged kind. 3. Those with loops in the angles between the edge of the blade and the socket. 4. In this variety we find the loops moved upwards, so as to form side apertures in the blade. These two latter varieties, but especially the last, are peculiarly Irish. Each variety has its diminutive, as already observed with respect to the swords and daggers.

By the five following cuts are represented good typical specimens of each of these varieties, as well as examples of the long, straight, and the recurve-edged forms of spear or javelin heads. The two first and the fourth figures present us with examples of the narrow elliptical, and the broad leaf-shaped varieties; and Figs. 364 and 366 exhibit the long narrow weapons of the third variety. Fig. 362 is drawn from No. 6, on Tray II, a very fine and perfect specimen of the long, plain, leaf-shaped spear-head with a feather-edge, and large rivet-holes across the conical socket. It is $13\frac{1}{4}$ inches long

* Extract supplied by Mr. Curry from his MS. translation of the *Táin-Bó-Cúailgne*. *Diceltair* is Cormac's word for a spear-shaft.

by $1\frac{1}{4}$ in the widest portion of the lanceolate blade; found in cauldron No. 14, see p. 540. Nos. 2, 3, 7, 55, 64, 65, 68, 74, 87, and 91, are of this variety. Figure 363, drawn from No. 79, on Tray JJ, represents a very fine spear-head slightly defective at top; $13\frac{1}{8}$ inches long by $2\frac{1}{4}$ broad at the base of the blade, which differs from the former in being widest below the middle: a subvariety, of which we have good examples in Nos. 28, 32, 249, 250, and 252. There is a loop on each side of the long narrow socket in a line with the edge of the blade, but not opposite each other, in which respect this specimen is unique. In all other instances the loops are placed opposite each other. A third sub-variety of the leaf-shaped spear-head is very broad in the middle of the blade, as in Nos. 10, 232, and 258. Figure 364, from No. 26, on Tray II, is a fine and very perfect specimen of the long narrow spear, with concave or



Fig. 362, No. 6.



Fig. 363, No. 79.



Fig. 364, No. 26.



Fig. 365, No. 249.



Fig. 366, No. 18.

recurved sides, and long, lozenge-shaped loops on each side of the socket, where the circular form of that portion of the weapon becomes angular. Narrow, lateral ridges connect

these loops with the base of the blade, which has hollow bevelled edges, and is as sharp as the day it came from the mould. The socket margin is decorated with a fillet of five elevations, and a double linear engraved or punched ornament, forming a triangular pattern, like that seen in some antique gold ornaments. A sharp ridge extends along the middle of the socket from the loops to the point, on each side of which, as well as in the angles between the blade and socket, there are lines of small oval punched indentations, apparently effected by the hand. It is 15 inches long by 2 wide across the base of the blade. In Fig. 365 the loops are still further raised into the blade, but are small, and furnished with external flanges. This cut is engraved from No. 249, on Tray **OO**, one of the finest specimens of broad-leafed spear ever discovered in Ireland; $13\frac{1}{2}$ inches long, and $3\frac{3}{4}$ wide across the blade. It is in the highest state of perfection, and has been cleaned to exhibit its original golden colour.

The final illustration, Fig. 366, represents the largest bronze spear-head in the Collection, and the second largest found in this country,—No. 18 in the centre of Tray **II**; $26\frac{3}{4}$ inches long by $2\frac{3}{4}$ in the widest part of the blade—with an ancient mending near the point, and a slight defect in casting at the base of the blade, which has a broad concave bevel round the edge. The socket is circular throughout, but short in proportion below the straight-edged blade. In the angles formed by these two portions are attached narrow slender loops—thus placing it in the third variety of this classification. It was found near Maghera, county of Londonderry.

In the four following illustrations are shown some of the sub-varieties of small dart or javelin heads. No. 132, on Tray **LL**; $3\frac{1}{2}$ inches long, is a rare form of leaf-shaped dart or arrow-head, represented one-half the natural size, by Fig. 367. Figure 368, from No. 125, on Tray **LL**, is the type of the plain triangular-bladed lance, or hunting spear, of which there are a great number, and of different sizes, in the Museum. (See

in particular Nos. 19, 59, 62, 125, 129, 164, 172, and all those in the bottom row of Tray **MM**, except No. 192.) It is $5\frac{1}{2}$ inches long, and 2 across the base of the blade; and has a very slender quadrangular stem, or socket, not hollow beyond its junction with the blade, in which respect it differs from all others in the Collection. It was found under two and a half feet of clay in the bed of the Quinn River, 20 perches east of Danganbrack Castle, barony of Upper Bunratty, county Clare; and—*Presented by the Board of Works.*



Fig. 367, No. 132.

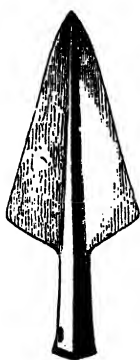


Fig. 368, No. 125.

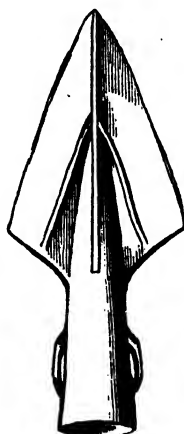


Fig. 369, No. 59.



Fig. 370, No. 239.

Figure 369 has been engraved one-half the natural size from No. 59 on Tray **JJ**, broad and triangular in thin flat blade, with raised cast ornaments on the sides, and along the upper portion of the wide conical looped socket, which terminates at the junction of the decorated lines. It measures $4\frac{1}{2}$ inches by $1\frac{1}{4}$. Figure 370 is an illustration of No. 239, on Tray **NN**, a rather rare and remarkable specimen of spear-head, with long triangular recurved-edge blade, deeply indented on each side of the very broad flattened oval socket. The loops spring from the margin of the socket. It is $6\frac{1}{2}$ inches long, and $1\frac{1}{4}$ across the junction of blade and socket.

The four annexed engravings, two of which are drawn from imperfect specimens, represent the best examples of the

highly decorated spear-heads, with large lateral apertures in the blades: which form the fourth variety in the classification of these weapons, of which there are sixteen in all, including No. 249, already figured on page 496. No. 100, on Tray **KK**, from which Fig. 371 has been engraved, is the lower fragment of a very beautiful and unique spear-head, with circular apertures below the large side openings. The wings of the blade above these openings are now detached from the socket to which they were there originally joined by an almost imperceptible line of adhesion; and



Fig. 371, No. 100.



Fig. 372, No. 36.



Fig. 373, No. 252.



Fig. 374, No. 34.

the raised mouldings round their inner margins continue along the edges of the socket, which is also decorated by an elevated ridge, which probably coalesced at the point with those of the blade, when the article was perfect. It is now $4\frac{1}{2}$ inches long, and 3 wide. Figure 372 exhibits, No. 36, on Tray **JJ**, another fragmentary specimen of this variety, now $10\frac{1}{2}$ inches long by $3\frac{1}{2}$ wide; the lateral apertures in the bevel-edged leaf-shaped blade of which are not symmetrical. The socket margin is surrounded by a cast decoration for $1\frac{1}{2}$ inch of its length, above which there is a large rivet-hole. In No. 252, on Tray **OO**, Fig. 373, we observe another form of this variety, strong, thick, short in lower portion of quadrangular socket, with holes at the angles of the elliptical lateral aper-

tures. It measures $11\frac{1}{2}$ inches long by $1\frac{1}{2}$ broad; has rivet-holes; and was—*Deposited by the Royal Dublin Society.* Fig. 374, from No. 34, on Tray JJ, illustrates a very graceful long-leafed spear-head, highly decorated in casting, by a series of raised roped lines extending over the surface of the socket, and forming an ornamentation round the rivet-holes, and along the outer edges of the narrow lateral apertures; the blade is bevel-edged. This article, which is $11\frac{1}{2}$ inches long and 2 wide, has all the appearance of having suffered from exposure to great heat.—*Presented by the Shannon Commissioners.*

By the following cuts are shown some sub-varieties of spear and arrow-heads. Figure 375, from No. 12, on Tray II, represents a small leaf-shaped spear, with the loops placed in the angle between the blade and socket; of fine yellow bronze, $6\frac{1}{2}$ inches long, by $1\frac{1}{2}$ broad. No. 190, Fig. 376, is a small, narrow specimen of the triangular-bladed hunting spear, with the loops low down on the circular socket,



Fig. 375,
No. 12.



Fig. 376,
No. 190.



Fig. 377,
No. 153.



Fig. 378,
No. 160.



Fig. 379,
No. 215.



Fig. 380,
No. 213.

$7\frac{1}{2}$ inches, by $2\frac{1}{2}$. Figure 377 represents the thick, short, large-socketed, small-bladed bolt or arrow-head of which there are about sixty specimens in the Collection, ranging from $2\frac{1}{2}$ to 6 inches in length, of which the socket always forms the major part. This specimen, No. 153, on Tray MM, $2\frac{1}{2}$ inches in length, is deeply indented in the blade on each side of the thick socket. No. 160, shown one-half the natural size by Fig.

378, is a good example of the same form of bolt-head. Figures 379 and 380 illustrate the small narrow-bladed, sharp-pointed, straight-edged javelin, of which there are many examples in the Collection. The former is drawn from No. 215, on Tray **NN**, $5\frac{1}{2}$ inches long, and $\frac{7}{8}$ across the widest part; the loops touch the lower margin of the blade. The latter, from No. 213, is of the same description, but wider in the socket. It is slightly defective at both extremities, but the top has been restored in the drawing. It now measures $5\frac{1}{2}$ inches.

The first cut in the following series of illustrations is a facsimile of No. 136, on Tray **LL**, the smallest dart or arrow-head in the Collection, but appearing in the engraving much larger than the original; the conical socket is hollow almost to the very top. See page 513.

Several of our spear and javelin-heads are most elaborately decorated both in casting and by hand, as shown by the accompanying illustrations. Figure 382 shows, one-half the natural size, the lower portion of the socket of No. 251, on Tray **OO**, a very beautiful and highly decorated spear-head of the long leaf-shaped variety, with raised bands, highly decorated with a chevron pattern.



Fig. 381, No. 136.



Fig. 382, No. 251.



Fig. 383, No. 191.

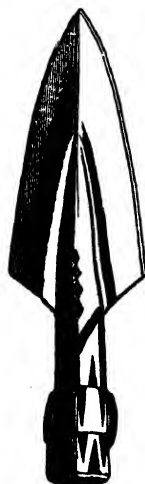


Fig. 384, No. 191.

This spear-head is 14 inches long by $2\frac{1}{2}$ wide, and was found near Athenry, county Galway. Figures 383 and 384 pre-

sent side and front views of No. 191, on Tray **MM**, a middle-sized, graceful, broad-bladed spear-head, with a sulcus on each side of the socket, where, in most other specimens of this variety, there is a raised line. It is in fine preservation, and most beautifully decorated by minute punched or incised lines all over the socket, as well as on the surface of the broad lozenge-shaped loop; see Fig. 383. It is $7\frac{1}{2}$ inches long by $1\frac{1}{2}$ wide at the base of the blade; and was found in the Shannon, at Athlone.

The perfection of spear-head decoration appears, however, to have been attained in those round-pointed, short articles, with deep depressions on each side of the socket in the angular blades, of which there are two fine examples in Nos. 192 and 193, on Tray **MM**, one of which is here represented, two-thirds the natural size. No. 192, Fig. 385, is 5 inches long by $1\frac{1}{2}$ wide, and has a central circular stud opposite the base of the blade, beneath which there are a series of minute continuous lines, margined on both sides by a row of elevated dots. This ornament, although now much

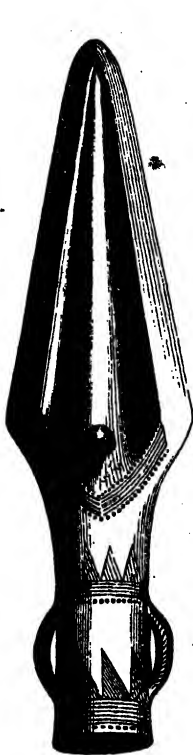


Fig. 385, No. 192.

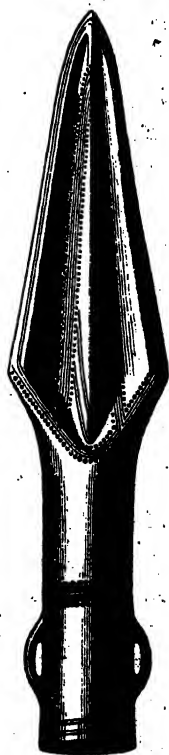


Fig. 386, No. 234.

effaced, evidently passed along the sulci on each side of the socket, as shown in No. 234. The outer surfaces of the loops are also beautifully decorated with incised and dotted lines of ornamentation. Figure 386 faithfully exhibits the beautiful

and delicate details of ornament on No. 234, which is $7\frac{1}{2}$ inches long. In several places this ornament may be observed in relief; but in one spot, where there is a patch of dark-coloured polished incrustation, or patina, it is depressed; a circumstance which, with our present knowledge of casting, it is difficult to account for.

The ornament on the circular portion of the socket in this specimen was evidently formed in the mould; but the triangular decoration on that in Fig. 385 was made subsequent to casting, and apparently by a chisel-edged tool.

ARROWS—in Irish, *Saigts*—of bronze were usually socketed, as shown by Figs. 377 and 378, page 500, selected from the large assemblage of these articles on Trays **MM** and **NN**, and described under the head of *Bolts* in the foregoing observations. Most of these would, from their shape, appear to have been projected from the cross-bow, or other engine of that nature.* The three following cuts are drawn from small, thin, flat, bronze arrow-heads, probably used for shooting with the simple bow at birds or minor animals, and were inserted into their shafts by means of slender tangs: see Rail-case **F**. Figure 387 represents a thin, flat, spear-shaped specimen, of

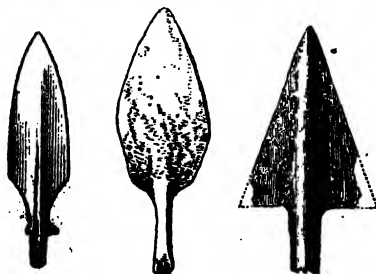


Fig. 387, No. 300. Fig. 388, No. 299. Fig. 389, No. 298.

yellow metal, slightly defective at the point, and flatter on one side than the other; now $3\frac{1}{2}$ inches long. Fig. 388, also flat and leaf-shaped, is hammered out of a piece of metal, and measures with the tang $4\frac{1}{2}$ inches, of which

the blade is about 3. The third figure shows a triangular arrow-head, $3\frac{3}{8}$ inches long, and flat on one side, as if cast in a single mould.

* In the writings of Harris, Vallancey, Walker, and others of their school, we read of the *Crann-Tabhuil*, stated to have been a sort of sling; but no authority is referred to for the assertion.

Handles and Ferules.—Notwithstanding the immense length of time which must have elapsed since these spear, javelin, and arrow-heads were in use, portions of their original oak and ash shafts remain in the sockets of several, see Nos. 45, 52, 76, 93, 116, and 133; but we possess few means of judging of their original length.* Many of them were, probably, long and slender. The simple leaf-shaped spear, or lance, was fastened to its shaft by a metal rivet passed across the socket; in the looped variety, a ligature, possibly, passed down from the socket, and was fastened to the shaft; but some of the spear-heads, with lateral apertures, have also rivet-holes in the socket.

To Tray PP, in the Northern Ground-floor, have been attached seventeen tubular articles, varying in length from $3\frac{1}{4}$ to 18 inches,—averaging about $\frac{1}{2}$ in the diameter of their central portions; and numbered in continuation of the spears from 274 to 290, both inclusive. These, at first sight, resemble bellows-nozzles; but upon a closer examination it will be found that some of them are imperforate at the small ends; and several specimens are filled with pieces of wood, evidently the extremities of the ancient clettins, or spear-shafts, to which these articles were ferules. Their small, decorated, pipe-like ends are but little worn, proving, should this conjecture as to their use be correct, that the but-end of the Irish spear, was seldom applied to the ground. Much art has been displayed

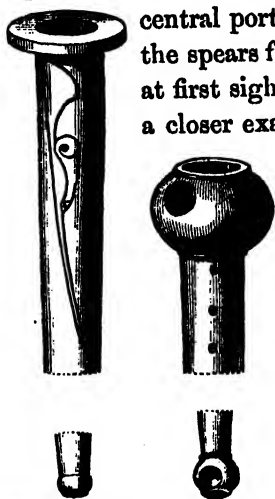


Fig. 390, No. 277. Fig. 391, No. 279.

in the manufacture of these articles, as shown in the two typical illustrations, here represented one-half the natural size, of the large and small ends of Nos. 277 and 279. Figure 390 is drawn from one of the largest of these ferules, 16 inches in

* In O'Davoren's Glossary (British Museum, Egerton, 88) is mentioned a *cuair* (spear), of "twelve fists in length, as well iron as shaft" (*fochuir .i. urlann.*)

length, probably soldered originally along the seam, but the joining is now open. It is decorated at top with the pattern shown above. Fig. 391 is from a smaller and differently-decorated specimen, with the seam joined by a number of oblique rivets, the holes for which are shown in the cut. Both the bulbous head and small extremity are cast; and the former has four counter-sunk indentations, probably for holding stones, enamel, or glass; there are two in the latter. It measures $14\frac{1}{4}$ inches; and was found in the river, at the site of the old bridge of Banagher, and—*Presented by the Shannon Commissioners*. It rather strengthens the opinion as to the use of these articles, that the majority of them were found upon the fords of the Shannon, along with several spear-heads and sword-blades, &c. A third form, of which there are four specimens at the bottom of Tray PP, is shorter, and more conical. See details of all these at p. 517.

Moulds, for spear and arrow-heads, are of rare occurrence; but there is one stone mould of this description in the Academy's Collection, with three separate indentations upon it; figured at page 91. See description of first Cross-case in the Northern Gallery, page 92.

The following is a detailed catalogue of the spears, javelins, and arrow-heads:—

WESTERN GALLERY.—BRONZE IV.

SHELF I., Tray II, contains thirty-six bronze spear-heads of different shapes and sizes, typical of the several varieties of this weapon; and consisting of simple leaf-shaped, both long and short; broad bolt-heads, with and without loops; those with apertures in the blades, and the long, narrow variety with straight side edges. Those of the simple leaf-shape pattern, Nos. 1 to 8, are arranged on the upper and lower rows of the left-hand corner of the Tray. The specimens chiefly of the long, narrow variety, with loops either on the sides of the sockets, or at their angles with the blades, occupy the middle

space in both rows, from Nos. 9 to 26; and those of the variety with lateral apertures are placed in the right-hand corner, from No. 27 to No. 36. No. 1, a broad, leaf-shaped spear-head, remarkable for the great length of the socket, and its angularity in the blade portion, as also for not having a rivet-hole; $10\frac{3}{4}$ inches long by $2\frac{1}{4}$ across the widest part of the blade. Found in 1847, with bronze sword, No. 35, and also an iron sword, three feet under a gravel deposit, in the River Glyde, to the south-east of Derrycrammagh Ford, parish of Mansfieldstown, county of Louth. No. 2, a beautifully perfect, long, leaf-shaped spear-head of Dowris-coloured bronze; grooved feather-edge round blade; cross rivet-holes, as in all the other specimens of this form; 10 by $1\frac{3}{4}$. Both this and the foregoing have been rubbed down in the point, evidently in modern times. No. 3, a beautiful specimen, of rare form, and in high preservation, having a raised line within the grooved feather-edge; very sharp point; $10\frac{3}{4}$ by $1\frac{3}{8}$. Found in deepening bed of Yellow River, below Ballinamore, townland of Ardrum, parish of Oughteragh, county of Leitrim. No. 4, a remarkably short specimen, with angular socket, which is not quite one inch long, below plain flat blade; $7\frac{3}{4}$ by $1\frac{3}{4}$. No. 5, in fine preservation, broad in blade, edges sharp; $12\frac{1}{4}$ by $2\frac{5}{8}$. Found in old bed of River Brusna, opposite ruins of Wheery Abbey, near Gallen, barony of Garrycastle, King's County. No. 6, a fine specimen of long leaf-shaped spear; figured and described at p. 496. No. 7, leaf-shaped, long, fractured near top, corroded; $15\frac{1}{2}$ by $2\frac{1}{4}$. No. 8, very perfect and remarkably large, slight feather edge, socket four-sided; $17\frac{1}{2}$ by $2\frac{1}{2}$ near base of blade. No. 9, long and narrow, has remains of brown patina, looped at junction of blade and circular socket, one loop defective, no rivet-holes in this or any other of the same variety; chamfered edge exquisitely sharp; $12\frac{3}{8}$ by $1\frac{3}{4}$. Found at Cutts, near Coleraine, on the River Bann. See sword, No. 23, p. 470. No. 10, broad, short blade, long socket, with side loops not touching blade; $7\frac{1}{2}$ by $1\frac{7}{8}$. No. 11, small, of the long straight-edged variety, bronze gold-coloured; loops flat, leaving triangular apertures between junction of blade and socket; $6\frac{7}{8}$ by $1\frac{1}{4}$. No. 12, ditto, but more leaf-shaped in blade, loop apertures less angular, slightly defective; $6\frac{5}{8}$ by $1\frac{1}{4}$. No. 13, a very perfect small bolt or javelin-head, broad, leaf-shaped

in blade, with ridge running along the most prominent portion of two upper-thirds of socket, feather-edge, broad loops in angles of blade and socket; covered with a smooth patina; the only specimen of its kind in the Collection; $4\frac{1}{4}$ by $1\frac{1}{2}$. No. 14, slightly imperfect in casting, edge of broad blade bevelled, lower portion of socket long, loops below angles of blade, but touching them; $10\frac{1}{2}$ by $2\frac{1}{4}$. No. 15, of bright-yellow metal, leaf-shaped, flat loops at angles of socket with broad bevel of blade; $13\frac{1}{8}$ by $2\frac{3}{4}$; said to have been found at Cootehall shoal, on the Boyle Water, county of Roscommon. No. 16, a perfect specimen of the long narrow spear, with straight edges; loops at angle of slender socket with broad bevelled blade; $16\frac{1}{2}$ by 2 at base of blade. Found with sword No. 1, and other articles, at Toome Bar, River Bann. See p. 468. No. 17, one of the finest specimens of long, narrow spear-heads in the Collection, and in excellent preservation, socket circular, but having a ridge along its blade portion; broad feather edge, running into flat compressed loops at junction of blade and socket; nearly 23 inches long, and $2\frac{1}{8}$ broad at base of blade. Found at Lough Gurr, county of Limerick. See p. 223. No. 18, the largest specimen in the Collection, and the second longest known to have been found in Ireland; figured and described at p. 496. No. 19, a good example of the triangular leaf-shaped spear, with concave lower edges; $7\frac{3}{4}$ by $2\frac{1}{8}$. No. 20, a short-bladed specimen of the straight-edged spear or javelin point, slightly decorated on blade, like the foregoing and following, by raised lines running downwards and outwards, so as to form a triangle with base of blade; loops on side of socket, which latter forms an angular projection in its blade portion; $8\frac{1}{2}$ by $1\frac{3}{8}$. No. 21, another specimen, identical in character, although not cast in the same mould; $8\frac{1}{2}$ by $1\frac{1}{8}$. No. 22, fractured in blade, and defective in socket, the remains of a very beautiful and rare form of long, rather leaf-shaped spear-head, with a raised cast ornament in blade, running along edge of four-sided socket, and prolonged below into long narrow loops, meeting the socket by a sharp bend, slight feather edge; 12 by $2\frac{1}{2}$ at base of blade. No. 23, a fine specimen of the long narrow spear, with concave side edges, welded near the top, point slightly defective, very large lozenge-shaped loops on sides of socket, where the circular form of that portion of the weapon becomes angular; lateral ridges between loops and blade; broad, hollowed bevel

edges, socket margin decorated with a circular cast moulding, and angular engraved or punched line ornament; now $19\frac{1}{4}$ inches long—but was originally probably 23—and $2\frac{5}{8}$ across widest part of blade. “Found 10 feet deep, near the remains of an ancient fortification.” No. 24, another specimen of somewhat the same variety, fractured in blade, and much battered on bevelled edge, socket circular, with very small loops below blade; $17\frac{1}{2}$ by $2\frac{1}{4}$. No. 25, a very beautiful specimen of the same variety as No. 23, but wanting about three inches of point, broad, lozenge-shaped loops, with lateral projections between them and the indented edges of the blade; a cast fillet surrounds socket margin; and a dotted line, apparently punched like celt No. 32, extends along the line of junction between the blade and socket, and on each face of the angular projection of that part; now $16\frac{3}{8}$ by $2\frac{1}{4}$. No. 26, a very perfect specimen of the same variety, and in fine preservation; figured and described at p. 496. No. 27, and all the remaining specimens on this Tray, have the loops brought into the blade, where, in some cases, they form large apertures on each side of the socket. In this specimen the blade is leaf-shaped, with small side apertures, the socket large and conical; $7\frac{3}{4}$ by 2. No. 28, a short, very broad, leaf-shaped spear-head, with small lateral apertures, having raised flanges on their outer edges; socket circular and conical, with rivet-holes not opposite each other, and appearing to have been drilled after casting—the maker probably finding the lateral apertures insufficient for retaining the weapon in its shaft; $5\frac{1}{2}$ by $2\frac{1}{4}$; found in gravel, in bed of River Clare, one foot under surface, in 1851, in townland of Pollacorrage, parish of Kilbennan, barony of Dunmore, county Galway. No. 29, another of the same variety, not so broad in bevel-edged blade; lateral apertures plain, wider, and lower down; socket large, trumpet-mouthed, and angular in blade portion; $6\frac{1}{2}$ by $1\frac{3}{4}$. No. 30, long and conical in socket; semicircular lateral apertures, with raised cast outer margins; bevelled blade edge, slightly concave; 7 by $1\frac{1}{2}$. No. 31, long, leaf-shaped in blade, with slightly indented margin; very large lateral apertures, with raised edges, meeting elevated lines running on each side of large conical socket; $10\frac{1}{2}$ by $2\frac{3}{8}$. No. 32, a very broad, leaf-shaped spear-head; small lateral apertures, with outside flanges; 11, of which the blade is 7 by $3\frac{1}{2}$ in its widest part. No. 33, a long, nar-

row blade, in bad preservation; lateral apertures near junction with circular socket; $13\frac{1}{2}$ by $2\frac{3}{8}$. No. 34, a long, leaf-shaped spear-head; figured and described at p. 499. No. 35, a rare specimen, wanting about three and a half inches of top; lateral apertures like foregoing; the bevelled edge of blade extends down on each side of circular socket to rivet-holes; now $10\frac{1}{2}$ by $1\frac{3}{4}$. No. 36, the lower fragment of a spear-head; figured and described at p. 499.

Of the foregoing articles, Nos. 1, 3, 5, 9, 16, and 28, were—*Presented by the Board of Works.* Nos. 33 and 34—*by the Shannon Commissioners.* No. 15—*by R. A. Gray, Esq., C. E.* No. 27, *by the executors of Leslie Ogilby, Esq.* Nos. 7, 21, and 32, were procured with the Dawson collection; and Nos. 4 and 12, from that of Mr. Murray, of Mullingar.

SHELF II.—*Tray JJ*, contains fifty-five spear-heads, arranged in three rows; the first, from Nos. 37 to 51, consists of small spear or javelin-heads, chiefly of the short leaf-shaped variety: and, with two exceptions, Nos. 40 and 44, without loops. The sockets in this variety are proportionably larger and more conical than those of the long leaf-shaped specimens on *Tray II*; and also extend almost to the very point, so that the leaf or blade portion is secondary to the socket, and forms, in many specimens, but a slight wing; for example, in No. 43. In size, the specimens in this row vary from No. 37,—which is little more than 4 inches in length, and $1\frac{1}{8}$ broad,—to 41, which is 5 in length, and $1\frac{1}{8}$ broad in the blade. Except the two with loops, and No. 47, they have all rivet-holes placed laterally, and larger in proportion to the size of the article than in any of the foregoing. See especially Nos. 41, 46, and 48: they are all perfect specimens. In No. 40 the loop is at the junction of blade and socket, and in No. 44 there are small lateral apertures in the blade. In No. 45 the rivet remains, and the socket is filled with a portion of the handle. No. 43 was found at Keelogue Ford; No. 45, in the channel of the River Boyne, above Stoneyford Bridge, county Meath. No. 50 was discovered four feet under alluvial deposit resting on limestone gravel, in the drainage out through Brooklodge demesne, near Knockmoy, parish of Killreran, county Galway; it has been much hacked on the edges. No. 51 was found in the same locality, but only three feet under the surface.

The second row, extending from No. 52 to 72, contains a great

variety of spear-heads, bolts, and javelins. The first six, from No. 52 to 57, are of the leaf-shape variety, and vary in length from 8 to 9 inches. Nos. 54 and 57 have loops between the blade and socket. No. 52, which was found at Cutts, on the River Bann, has a portion of the oak shaft still remaining in the socket. No. 55 was found resting on gravel below bog, five feet under the surface, in side cutting of the River Deel, in the neighbourhood of a crannoge, described, upon the label attached to this article, as "a little mound, formerly an island, which contained a quantity of human bones, and some iron spears," in the townland of Joristown, parish of Killucan, county of Westmeath. See "Proceedings," vol. v., App., p. 55.

The six next specimens in this row are small, broad spear-heads, numbered from 58 to 63; those which are perfect, vary in length from $4\frac{1}{2}$ to $4\frac{5}{8}$ inches. Nos. 62 and 63 are imperfect in the shafts. No. 58, short and thick, has lateral apertures in blade. No. 59, a miniature of No. 19, is figured and described at p. 498. Nos. 60 and 61 are looped on the sockets. No. 62 has a decorative line on the flat of the blade, like No. 59; and No. 63 is deeply grooved in the blade on each side of socket, like Fig. 385. The remaining nine spear-heads on this row, numbered from 64 to 72, are, except 69, of the plain leaf-shaped pattern, and vary in length from $7\frac{1}{2}$ to $9\frac{1}{2}$ inches. No. 64, is $8\frac{3}{4}$ inches long, and measures only $\frac{3}{4}$ in the length of the socket; it was found in the River Boyne, along with sword No. 104: see page 477. No. 65 was found near Headford, county of Galway. The antiquity of No. 69 has been questioned; the blade edges are very thick and blunt, and the casting ruder than the veritable antique specimens. No. 70 is remarkable for the length of the socket, compared with the blade. No. 72 was found at Athlone.

The bottom row of this Tray consists of nineteen spear-heads, chiefly leaf-shaped, and varying in length from $17\frac{1}{2}$ to $8\frac{3}{4}$ inches. Nos. 73, 75, 80, 81, 82, and 90, are looped in the angles between the blade and socket, and 88 has large lateral apertures, like No. 251. No. 73, a perfect, narrow, leaf-shaped spear-head; $10\frac{1}{2}$; was found 5 feet deep in Logstown bog, near Blessington, county Wicklow. No. 75 was found in the Shannon, near Banagher. No. 76, slightly defective in socket, but very perfect in blade; has a portion of the charred handle remaining; was procured from Lough Gurr, county

Limerick. No. 77, of a bright yellow metal, was found at Corryolus, parish of Kiltoghert, county of Leitrim. No. 78, a very fine, perfect spear-head; $12\frac{5}{8}$ long; was found at Ardee. No. 79 is a spear-head, figured and described at p. 496. No. 80 is $16\frac{1}{2}$ inches long, slightly ornamented round socket margin; was found near Athlone. No. 81, defective in point, and injured where very thin blade meets socket; it is now $16\frac{1}{8}$ inches long. No. 82, of the same variety; $17\frac{1}{2}$; was found at Athlone. No. 83, a very fine spear-head of the narrow variety, like Nos. 53 to 56; is only $\frac{5}{8}$ across middle of socket; decorated margin, $17\frac{1}{4}$ long. No. 84, a fine specimen of the broad leaf-shaped spear-head, of reddish-yellow metal, with very large rivet-holes; 13; was found at Keelogue ford. No. 85, resembling in its short socket Nos. 71 and 77, is defective near the base; $12\frac{1}{4}$; found at Cornacarrow, on the Shannon, near Jamestown, county Roscommon. No. 86 has been mended with modern solder; figured by Beranger.—See p. 439. No. 87, a very beautiful spear-head of the narrow leaf-shape, and in fine preservation; $11\frac{5}{8}$ long; was found, with No. 256, two sword-blades, Nos. 22 and 83, and a great number of other antique articles of a like nature, on the lands of Knockadoo, not far from the banks of Lough Gara, the property of Viscount Lorton, by whose permission they were deposited in the Museum, on 16th May, 1840, by W. R. Wilde, Esq., and thus served as the nucleus of that great collection of the ancient bronze arms of Ireland which has since accumulated in the Academy. No. 88, defective on one side; remarkable for large size of blade-portion of socket. Nos. 89 was found in Athlone; it and 91 are leaf-shaped; No. 91 is looped between blade and socket.

Of the foregoing, Nos. 38, 39, 41, 42, 46, 47, 48, 61, 63, 66, 67, 71, and 90, were procured with the Dawson Collection. Nos. 43, 58, 72, 75, 80, 81, 82, 84, 85, 89, and 91, were—*Presented by the Shannon Commissioners*; and Nos. 45, 50, 51, 52, 55, 64, 77—*by the Board of Works*; No. 65 was—*Presented by G. J. St. George, Esq.*; No. 73—*by the Rev. R. Galvint, C. C.*; and No. 69—*by Executors of Leslie Ogilby, Esq.*

GROUND-FLOOR, FIRST COMPARTMENT, END CASE.—BRONZE V.

SHELF I., *Tray KK*, contains twenty-five incomplete or fragmentary narrow spear-heads, numbered from 92 to 116. The only

nearly complete specimen is the arrow-head, No. 95, found at Kilbride shoal, on the Shannon; but which is deficient in a portion of the socket; $3\frac{1}{2}$ inches long. No. 92 is covered with an eruginous incrustation. No. 93, part of a socket, shows by what very thin edges the blades were attached to this portion, how fine the casting, and how accurate must have been the adjustment of the moulds; some of its wooden shaft still remains. No. 96, the lower fragment of a long, very narrow leaf-shaped spear, looped and decorated round socket margin, of very fine yellow bronze; analyzed by Mallet. See No. 5, Trans. vol. xxii., p. 323. "The bronze was," he says, "hard and uniform, and had received and retained a very good edge. Specific gravity, 8·581;" composition—copper, 86·28; tin, 12·74; lead, ·07; iron, ·31; cobalt, ·09. No. 99 was found at Athlone. No. 100, the lower fragment of an unique spear-head; figured and described at p. 499. No. 101, a very rude piece of metal, in the shape of a broad arrow; 4 by 3; procured from Mr. Wakeman, and believed to have been discovered at Dunshaughlin; 4 by $2\frac{1}{2}$. No. 102, a very rude, flat spear-head, without a socket, and which was probably fixed in a shaft by means of a tang; procured as the foregoing. No. 106 was found at Athlone. No. 112, the remains of a very beautiful, and remarkably long, spear-head, with thin, narrow wings, and side apertures. No. 115 was found at Keelogue Ford. No. 116, the fragments of a long, looped spear-head; $15\frac{1}{2}$ long, with the top of the original shaft *in situ*, and showing that it passed up the socket to within about $4\frac{1}{2}$ inches of the top. Found at Cutts, on the Lower Bann.

Of the foregoing, Nos. 92, 94, 97, and 112, were procured with the Dawson collection. Nos. 95, 99, 106, 110, 113, and 115, were —*Presented by the Shannon Commissioners*; and Nos. 103 and 116 —*by the Board of Works*.

SHELF I, Tray LL, contains thirty-six small spear, javelin, and arrow-heads, chiefly of the narrow, leaf-shape variety, arranged laterally in two rows, the largest specimens occupying the centre; numbered from 117 to 152. In length they vary from $1\frac{1}{2}$ to $7\frac{1}{2}$ inches. Nos. 117 and 136 are small arrow-heads, consisting almost entirely of the large conical sockets, and with scarcely any wing or blade portion. They are the smallest specimens of this description of weapon in the Collection. Many of the others may have been

used as hunting spears. No. 125 is figured and described at p. 498. No. 129 is of precisely the same form, but somewhat larger, ruder, and in bad preservation. No. 131 is believed to be modern. No. 132 has been figured and described at p. 498. No. 133, remarkable for the extreme narrowness of the blade, is $3\frac{1}{4}$ long, and scarcely $\frac{3}{4}$ across the widest part; it contains a portion of the ancient handle. No. 135 is an exceedingly elegant arrow-point, in form like the long, leaf-shaped spears. No. 136, the smallest arrow-head in the Collection (see Fig. 381, p. 501), was found in the River Blackwater. No. 137 was found at Dowris. No. 140, a very beautiful and most perfect spear-head, in the highest state of preservation; $6\frac{1}{2}$ long; was found in gravel, five feet below the surface, near Inchamore Bridge, on the River Boyne. No. 141 is very narrow in the blade compared with its length. No. 146, a very perfect and rare form of leaf-shaped spear; $6\frac{1}{4}$ by $1\frac{3}{4}$ across middle of blade; found in the Shannon, at Carrick, county Leitrim. No. 148 is remarkable for the large size of its conical socket, which extends to within $\frac{2}{3}$ of an inch of the extremity of the blade.

Of the foregoing, Nos. 120, 123, 129, 133, 134, 145, 151, and 152, formed part of the Dawson collection. Nos. 125, 139, and 140, were—*Presented by the Board of Works*; No. 127—*by the Shannon Commissioners*; No. 131—*by executors of Leslie Ogilby, Esq.*; No. 141—*by Lord Farnham*; and 146—*by R. A. Gray, C. E.*

SHELF II., *Tray MIM*, contains forty-nine small spear and arrow-heads of the looped variety arranged in three rows, and numbered from 153 to 201. The first row consists of eighteen bolt or arrow-heads, in which the length of the socket is as much as that of the blade. With one exception, No. 166—which is provided with lateral apertures—the loops are placed on the sides of the socket; in length these specimens vary from $2\frac{5}{8}$ to $3\frac{3}{8}$ inches. No. 153, a small bolt-head, figured and described at p. 500. No. 154 is $2\frac{7}{8}$ inches long, but the blade portion is only $1\frac{1}{8}$. No. 160, figured and described at p. 500, is a small specimen with indented blade, resembling No. 192. The second row, from No. 171 to 187, is made up of larger specimens than the foregoing, varying in length from $3\frac{3}{4}$ to $4\frac{7}{8}$, and generally broader in the blade than the former. Nos. 171 and 172 resemble the broad, triangular spear-head, Fig. 369, p. 498. No. 179, is a miniature example of No. 32, on *Tray*

II. No. 180 and 181 have depressions in the blade on each side of the socket, like No. 192. No. 186 was found two feet deep in a gravel shoal, between Lough Rynn and Lough Sallagh, close to Rynn Castle, near Mohill, county Leitrim. See description of the crannoge adjoining that river, in *Proceedings*, vol. vii., p. 147. The third row consists of fourteen specimens, all, except No. 192, of the broad, triangular-bladed variety, with elevated angular decorations on the flat of the blade. No. 188 was found in the county Westmeath. No. 190 is figured and described at page 500. No. 191 is figured and described in p. 501. No. 192, one of the most beautifully decorated spear-heads in the Collection, is figured and described at p. 502. In No. 193, with narrow, leaf-blade, the loops are placed in the angles between the socket and blade, which latter is prolonged into them. No. 197 was drawn by Beranger. See p. 439.

Nos. 153, 156, 157, 166, and 198, formed part of the Dawson collection; Nos. 158 and 189, of that belonging to the late Major Sirr. Nos. 59, 175, 177, 180, 183, 184, and 196, were purchased from Mr. Murray, of Mullingar, county Westmeath; and were probably collected around that locality. Nos. 169 and 191 were—*Presented by the Shannon Commissioners*; No. 186—*by Board of Works*; No. 188—*by Rev. Mr. Fitz Gerald*; and No. 190—*by Lord Farnham*.

SHELF III., Tray NN, contains forty-five small spear and arrow-heads, numbered from 202 to 246, and arranged in two rows. They are chiefly of the long, narrow variety; and, with five exceptions, have the loops placed on the sides of the sockets. The specimens on the top row vary in length, from $3\frac{3}{4}$ to 6 inches. No. 202 is of bright-yellow bronze, scarcely affected by time. Nos. 206, 212, and 214 have the loops placed in the angles between blades and sockets. No. 207 is remarkable for the position of the loops, immediately below the short socket. No. 213 is figured at page 500. No. 214 has a remarkably narrow, straight-edged blade. No. 213, ditto; figured and described at p. 500. No. 221 is remarkable for the shape of the indented blade.

The second row contains twenty-two specimens, varying in length, from $5\frac{3}{4}$ to $8\frac{3}{4}$. No. 230 has a peculiar ridge on the flat of the blade on each side of the socket. No. 228 was found at Athlone. No. 234, in very perfect preservation, is a fine specimen of spear-head, with indented blade, like No. 192, but differing from it in

the angularity of the blade portion of the socket. It is highly decorated, both in casting and by hand, all over the surface of the socket, and along the sulci in the blade; $7\frac{1}{2}$ by $1\frac{3}{4}$. Figured and described at p. 502.

Of the foregoing, Nos. 204, 205, 207 formed part of the Dawson collection; No. 228 was—*Presented by the Shannon Commissioners*; No. 235, *by the Board of Works*; and No. 242, *by Executors of Leslie Ogilby, Esq.*

CENTRAL CASE, SHELF I., Tray OO, contains twenty-three spear, javelin, and arrow-heads (chiefly procured since the Collection was arranged in 1857); numbered from 247 to 273. Some of them are the finest specimens in the Collection; but others are merely fragmentary. The three first have been cleaned, to exhibit the colour and texture of the metal. No. 247, a very perfect and gracefully-shaped spear-head, in fine preservation, with conical socket, and slight feather-edges to blade; is of reddish-yellow bronze, slightly corroded on surface, large lateral rivet-holes; $10\frac{3}{8}$.—*Presented by Dr. Kelly, of Mullingar.* No. 248, a very perfect specimen of the narrow re-curve-bladed spear-head, with large lozenge-shaped loops on socket; remarkable for the beautiful golden colour of the bronze, and the extreme smoothness of the casting—a smoothness which, in the present day, could only be produced by burnishing; $9\frac{1}{8}$; found in Killyon Demesne, under eighteen inches of hard gravel in bed of River Deel, a tributary of the Boyne, barony of Upper Moyferath, county of Meath. No. 249, a very perfect and most beautiful specimen of the broad leaf-shaped spear-head; figured and described at p. 496. No. 250, one of the finest spear-heads in the Collection, and in the highest preservation; in colour it resembles the Dowris bronze; mottled with a brown and yellow varnish, but of what date is unknown; leaf-shaped, with side rivet-holes in large conical socket; slightly recurved feather-edge; $13\frac{5}{8}$ by 3. This specimen forms a portion of the *deposit made by the Royal Dublin Society* in 1860. In the socket was found the following label:—"A copper spear, found near the old castle of Streamstown, near Banagher, 14th of January, 1829." No. 251, a very beautiful and highly decorated leaf-shaped spear-head, but wanting point, and fractured below the centre, where it has been both brazed and soldered; socket decorated; and figured at p. 501; cross rivet-holes,—*Deposited by Sir B.*

Chapman, Bart. No. 252, a most perfect spear-head, in the highest state of preservation, with wide lateral apertures, and four circular perforations; socket angular externally, with three elevations on each side, and only an inch of it below blade; $11\frac{1}{8}$ by $2\frac{1}{2}$.—*R. D. S.* No. 253, a very remarkable unique form of narrow leaf-shaped spear-head, with narrow lateral apertures high up in blade, the lower edges of which pass down imperceptibly on long conical socket to rivet-holes; decorated on surface by a number of raised cast lines; 12 by $1\frac{3}{4}$. No. 254, a broad, leaf-shaped spear-head, with wide lozenge-shaped loops; much battered, and slightly corroded; $9\frac{1}{8}$ by $2\frac{3}{4}$. No. 255, perfect, narrow, leaf-shaped socket, conical, large rivet-holes; slightly corroded; irregular on surface; $9\frac{1}{8}$ by $1\frac{3}{8}$.—*Presented by T. B. Huthwaite, Esq.* See Proceedings, vol. vii., p. 279. No. 256, ditto, perfect, and in fine preservation; bevel-edged blade prolonged to rivet-holes; $8\frac{5}{8}$ by $1\frac{1}{4}$; found with No. 87, and—*Presented by Lord Lorton*, No. 257, ditto, but somewhat smaller and plainer; 8 inches long by 1 across blade. No. 258, short, broad, leaf-shaped, perfect, but much corroded, and in bad preservation; $8\frac{5}{8}$ by 2. Found in the bed of the River Glyde. No. 259, a small, perfect arrow-head; $2\frac{3}{4}$. Described as No. 249, in Proceedings, vol. vii., p. 130. No. 260, a much-battered and defective portion of spear-head of the broad angular variety; $3\frac{1}{8}$ (Sirr). No. 261, upper fragment of spear-head; $3\frac{3}{4}$. No. 262, portion of bronze blade, with thick circular solid midrib and bevel edges; $3\frac{1}{4}$. Analyzed by Mr. Mallet, who says it is "tarnished, of a deep brown colour, resembling, I believe, the appearance of the bronze called 'cinque cento;' when filed, the metal was found to be exceedingly hard, and of a yellow colour; specific gravity, 7.728." Its composition was found to be—copper, 84.64; tin, 14.01; with a trace of iron and sulphur. No. 263, fragment of spear-blade; $2\frac{3}{4}$. No. 264, a very perfect, short-bladed bolt-head, with narrow loops; $3\frac{3}{4}$ by $1\frac{3}{4}$ in width: from Ballindery. No. 265, a narrow, straight-edged javelin, wanting point and side loops; $6\frac{5}{8}$; found at Ballymore, county of Westmeath; described as No. 87 in Proceedings, vol. vii., p. 130. No. 266, a very perfect, narrow javelin-head, straight-edged, lozenge-looped; $6\frac{7}{8}$ by $1\frac{1}{4}$. No. 267, a small-javelin-head, narrow in the blade; $4\frac{7}{8}$. No. 268, ditto, smaller, curved in point; $4\frac{1}{8}$; looped. No. 269, a small, leaf-shaped javelin-point,

notched in the edge; $4\frac{1}{8}$; described as No. 248 in Proceedings, vol. vii., p. 130. No. 270, a very perfect bolt or javelin-head, the only one of its class or size in the Collection, in which the side loops run into the blade; described as No. 247 at p. 130, vol. vii. of Proc.; $3\frac{3}{4}$. No. 271, a small narrow javelin-point, in bad preservation; $4\frac{1}{4}$. No. 272, a short, broad-leaf, triangular, spear-head, with broad, lozenge-shaped loops; 6 by $2\frac{1}{8}$.—*Deposited by Sir B. Chapman, Bart.* No. 273, the broken-off point of a large, long spear-head; $6\frac{1}{2}$.

Besides the foregoing presentations, Nos. 248 and 258 were the gift of the Board of Works.

TRAY PP contains eighteen bronze tubes, which probably formed the ferule-ends of spears, numbered from 274 to 291. No. 274, a plain bronze tube, closed at the small extremity, and imperfect at the other; now $8\frac{1}{2}$ inches long. Found at Curries, near Carnararrow, on the Shannon, between the counties of Leitrim and Roscommon. No. 275, another of the same description, but more perfect, and having a rivet hole; $14\frac{1}{2}$ long; found in Lough Gurr, county of Limerick. Both of the foregoing have been brazed at the junction of the tube. No. 276, the largest and most perfect specimen of its kind in the Collection; in the highest state of preservation; of fine, light-yellow metal, with an ornamented projecting collar at top, and also at the small extremity; perforate throughout, soldered by a delicate line of junction; found in the river, at Carrick-on-Shannon. No. 277, another of the same variety, but rather shorter. Figured and described at p. 504. No. 278, ditto, but still shorter, and imperfect at joining; 12 inches long; found in the Shannon, locality unspecified. No. 279, a different variety from the foregoing. Figured and described at p. 504. No. 280, a cast, slender tube, with double ring head ornament; contains a portion of the ancient wood; $11\frac{1}{2}$; found in the Shannon, near Jamestown, county Roscommon. No. 281, ditto, also cast; shorter, and in better preservation; contains portion of ancient wooden shaft; $9\frac{1}{2}$. Found at Carrick-on-Shannon. No. 282, cast; thick, short, with bulbous extremities; $6\frac{3}{4}$; found at Toome Bar, on the River Bann, three feet under surface; contains a piece of the ancient shaft. No. 283, ditto, somewhat longer, with double bulbous ornaments at each extremity; $7\frac{1}{2}$. No. 284, a different variety of spear-ferule, cast; short, conical, with chisel-edge, resembling similar objects

found in Scandinavia; $3\frac{1}{2}$. No. 285, also cast, resembles 283, and is $7\frac{1}{2}$. No. 286, plain, somewhat corroded; with slight bulbous extremities; $5\frac{1}{2}$. No. 287, ditto, shorter; $5\frac{1}{4}$. The four next specimens are larger at the upper extremity, and more conical. No. 288 is cast; $5\frac{1}{2}$ in length by $1\frac{1}{2}$ across upper end; found in the Shannon, at Banagher. No. 289, ditto, longer; contains a portion of the ancient wooden shaft; $6\frac{1}{2}$; found on site of old bridge at Banagher. No. 290, short, thick, conical, and imperfect; 3. No. 291, ditto; $3\frac{3}{4}$ in length (Dawson).

Of the foregoing, Nos. 274, 278, 279, 280, 288, and 289, were—*Presented by the Shannon Commissioners*; Nos. 276 and 281—*by R. A. Gray, C. E.*; and No. 282—*by the Board of Works*.

There are only eighty-nine spear-heads, chiefly of the plain leaf-shape variety, in the Copenhagen Museum.

RAIL-CASE **P**, part of—contains ten articles connected with the subject of spear and arrow-heads, described in the foregoing details of Trays. No. 292, a metal model of the longest spear-head which has yet been discovered in Ireland, and of the same variety as No. 18, on Tray **II**, figured and described at p. 496. It is 32 inches long, and was—*Presented by Mr. Carruthers*. The original is now in the British Museum. Nos. 293 to 297, are metal models of spear-heads. Found in the county of Northumberland.—*Presented by Lord Talbot de Malahide*. No. 293 is plain leaf-shaped, and $12\frac{1}{2}$ inches long. No. 294, ditto; a good specimen, like No. 6, figured at p. 496; it is $14\frac{3}{4}$ inches long. No. 295, with side apertures, is $16\frac{1}{2}$. No. 296, leaf-shaped, with flat socket; $11\frac{3}{4}$. No. 297, ditto, small; $7\frac{3}{8}$. Nos. 298, 299, and 300, small flat arrow-heads, figured and described at p. 503. No. 301, a spear or halbert-end, of bronze, with a short screw passing through one side; counter-sunk at top, as if to receive another piece of metal.

For the remainder of Rail-case **P**, see conclusion of Tray **GGG**.

The SHIELD,—in Irish *Sciath*,—and which was used in lieu of the sword-guard, should here follow in the enumeration of antique arms; but as yet we do not possess any well-marked vestiges of such articles appertaining to the bronze period. The principal materials of which such ancient articles were composed

—being probably of wicker-work and leather—were of too perishable a nature to have lasted for any length of time. All the shields figured either in our ancient manuscripts, or sculptured on early Irish monuments, are circular (see p. 299.) With the gift of shields from the Irish kings to their inferior chieftains were also invariably combined “war swords,” or “swords for wounding.” We read of “shields with the brightness of the sun;” also “fair shields from beyond the seas,”—showing that such articles were imported; likewise “golden shields: red shields,” and “shields for deeds of valour.”—See *Book of Rights*. The only bronze articles in the Academy’s Collection likely to have served the purpose of shields are those embossed plates of bronze on Tray **UUU**, decorated with what has been denominated the trumpet-pattern, from its resembling an arrangement of curved horns, and regarded as a peculiarly Celtic form of ornamentation. As, however, their use has not been determined, they have been classed under the head of “miscellaneous articles.” In the ancient historical tale of the Battle of Magh Rath, we read of an Irish hero having “a protecting shield with a golden border upon him; two battle-lances in his hand; a sword, with knobs of ivory [teeth], and ornamented with gold, at his side: he had no other accoutrements of a hero, besides these.” This shield is said to have been of such a size as to act as a protection against the weather, as well as a defence in battle.* Walker, in his *Memoir on the Arms and Weapons of the Irish*, relates the discovery of a gold-adorned shield, found near Lismore.† The same author mentions the fact of a golden helmet, found in the county Tipperary, having been offered for sale in Dublin—see page 137. For further particulars relating to shields, see the notice of them under the head of Iron weapons.

* See O'Donovan's translation for the Irish Archæological Society, p. 65.

† At p. 177 of that work, the antique alluded to above is conjectured to have been a corselet. It was sold for £600 to a goldsmith in Cork.

SPECIES II.—TOOLS.

WITH the exception of the celts, which, as already stated, served the double purpose of tools and weapons, like the axe and tomahawk, there are but few implements in antiquarian collections that appear to have been used in the domestic arts of the bronze period. Those articles that may be considered the representatives of the iron tools of the present day have been arranged on Trays **QQ** and **RR** in the first compartment of the northern ground-floor of the Museum, and consist for the most part of small celts, chisels, and gouges, some of the first of which are copper. The two latter varieties were evidently furnished with handles, like modern implements for a like use; some have stops or collars to prevent them passing in too far, and splitting their wooden handles; while all the gouges have hollow sockets. The eleven plain, chisel-shaped tool-celts, arranged on the top row of Tray **QQ**, are smaller and slighter than any of those in the Collection of such articles already described under the head of Weapon-Tools. Of these, Nos. 1, 6, 7, 9, and 10, are of copper.

CHISELS.*—Of these there are four varieties:—1, long and narrow, with cross studs or guards projecting from the sides, like those represented by the three first figures in the following series of illustrations, drawn from Nos. 16, 25, and 36. There are nine such articles in the Collection, varying in length from $3\frac{1}{4}$ to $5\frac{1}{2}$ inches. No. 16, Fig. 392, is $5\frac{1}{4}$ inches long. No. 36, Fig. 393, is a very remarkably shaped and decorated tool, with shoulder studs, grooves, and loops; $4\frac{7}{8}$ inches long. No. 25, Fig. 394, the largest specimen of its kind in the Collection, is $7\frac{1}{8}$ inches in length, and 2 wide across the stop.—*Presented by R. Mallet, C. E.* See Proceedings, vol. v., p. 323. 2. With broad axe-shaped blades, long, slender

* In the Annals of the Four Masters, the term *Fonstra* is used for chisel. It is still a living word in the *dérlagair na Saer*, or secret craft-language of masons and carpenters. We do not yet know any ancient Celtic name for gouge.

spikes or tangs, and raised collars, against which the straight wooden handles abutted, are represented by thirteen specimens,

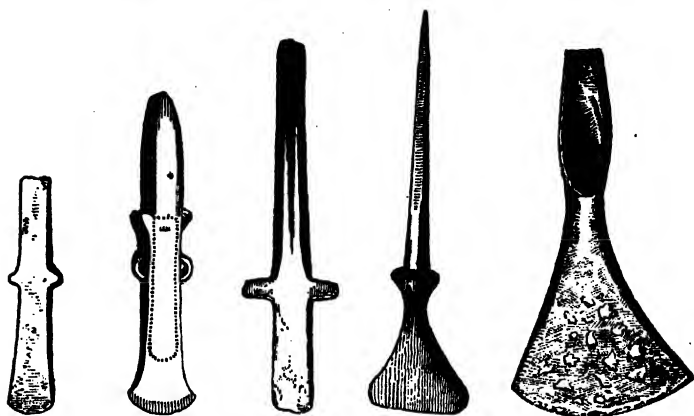


Fig. 392, No. 16. Fig. 393, No. 36. Fig. 394, No. 25. Fig. 395, No. 75. Fig. 396, No. 78.

varying in length from $2\frac{1}{2}$ to $6\frac{1}{4}$ inches; and of which No. 75, Fig. 395, which is $6\frac{1}{4}$ inches long, is a characteristic specimen. 3. Figure 396 is drawn from No. 79, a long, slender, thin, axe-edged palstave, with shallow grooves, and measuring $5\frac{3}{4}$

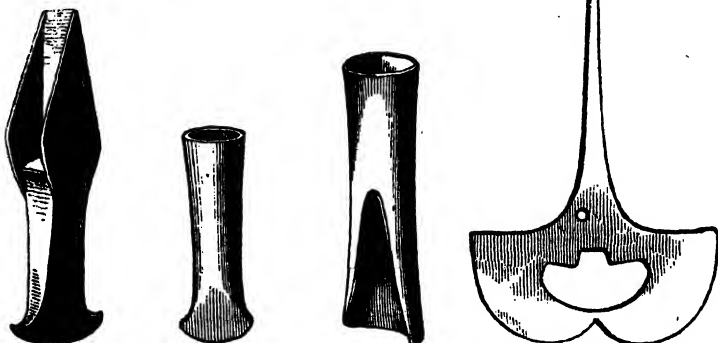


Fig. 397, No. 35. Fig. 398, No. 21. Fig. 399, No. 61. Fig. 400, No. 80.

inches in length by $2\frac{3}{4}$ across the widest part of the blade. There are three specimens of this variety, arranged in the bottom row of Tray RR, all of about the same size. Under

the head of this variety may be classed several small, narrow, chisel-edged palstave celts, varying in length from $2\frac{1}{2}$ to $5\frac{1}{4}$ inches; narrower in the blade than any of the true celts, and of which No. 35, Fig. 397, which is $4\frac{3}{8}$ inches long by 1 wide in the blade, is the type. 4. Of the socketed variety of chisels, represented by Fig. 398, drawn from No. 21, which is $3\frac{1}{4}$ inches long, there is only one specimen in the Collection.

Gouges are by no means uncommon among bronze antiquities; the Academy possesses twenty-one specimens, all, except that described at page 158, arranged on Tray **RR**, and of which No. 61, Fig. 399, drawn one-half the size of the original, is the type. In length they vary from $1\frac{1}{2}$ to $4\frac{1}{2}$ inches; and are numbered from 44 to 62; with one exception, they are all socketed, and most of them are sharp on the cutting edge.

Among the articles which were, to all appearance, used as tools, but of which the precise use is as yet conjectural, may be specified No. 80, on Tray **RR**, a thin, flat bronze instrument; $3\frac{1}{4}$ inches long by about 2 wide in the blade, and represented by Fig. 400, page 521. Supplied with a handle, it would make a good leather-cutter. It was—*Presented by the Shannon Commissioners.*

PUNCHES.—The top row of Tray **RR** contains four round-faced socketed punches, varying in length from 2 to 4 inches,

A small bronze **ANVIL**,—in Irish, *Inneoin*,—No. 38, on Tray **RR**, is figured the natural size on the opposite page. It appears to have been much worn, and was probably used as a jeweller's "stake." Round the edge are a series of riveting holes of different sizes.

ADZES.—By Fig. 402 is represented one of three curious bronze curved adzes, now in the Academy's Collection, Nos. 81, 82, and 83, on the top shelf of the Cross-case between the first and second compartments on the ground-floor of the northern side of the Museum. They are nearly all alike, resembling

a cooper's hand-adze, but blunt, heavy, and about five inches along the face. Two are altogether solid. No. 82 was found in a rath at Moneygall, county of Tipperary; and No. 83, figured below, has an aperture three-quarters of an inch in diameter in the head, evidently for passing a handle through. It measures $4\frac{1}{2}$ along level face, and weighs 55 oz. In the

Brehon Laws we find the following curious reference to



Fig. 401. No. 38.

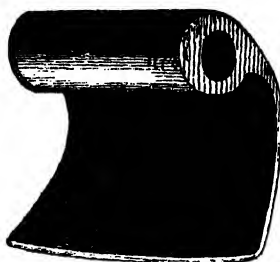


Fig. 402. No. 83.

a bronze adze, evidently referring to pagan times:—When a female desired to clear her character by a certain ordeal, she was required to rub her tongue to an adze, not of iron, but of

brass (*Tal Umhadh*); and it should be heated or reddened in a fire made either of the rowan tree or the blackthorn; and, adds the writer, “it is a druidical ordeal.”* That these articles could not, in their present state, have been used as edged tools is manifest from their bluntness; but one in Mr. Murray's collection has been filed or rubbed down on its edge, although cast blunt.

Among the few implements mentioned in our early Irish writings was the *dirna*, a weight used by the “miner who digs

* I am indebted to Mr. Curry for the foregoing curious notice of the ordeal by licking heated metal. When a boy, I have frequently seen this custom of licking a red-hot piece of iron used in the county Rosecommon as a test of truth, and giving origin to the expression, “I dare you to the tongs.” The fiery ordeal was not uncommon in England.

the copper;" but we have no specimen of any such article in the Collection. In the same case with the adzes specified above, may be seen the few other bronze articles coming under the head of Tools in the Collection: viz., moulds—but they are not of any great antiquity. One of these, No. 85, a brass mould for casting coats of arms and heraldic devices, has already been described as No. 97 in the Proceedings, vol. vii., page 130. Ouncels are of the same species, see page 552.

The following list comprises all the antique tools in the Collection:—

BRONZE V.—GROUND-FLOOR, NORTH SIDE, FIRST COMPARTMENT.

SHELF I., Tray QQ, contains thirty-seven bronze tools, principally of the celt and chisel-shape; numbered from 1 to 37. The top row mostly consists of small narrow celts, of which Nos. 1, 6, 7, 9, and 10, are copper. No. 8 was found in excavating the bed of the River Scarriff, county Clare. Nos. 12 to 20, in the second row, are chisel-shaped implements, with cross guards, and of which variety Nos. 16 and 25, figured at p. 521, are the types. No. 21 is a socketed chisel, figured and described at p. 521. No. 22, a solid celt-shaped chisel; $3\frac{1}{4}$. No. 23, the narrowest chisel-edged implement in the Collection, with raised shoulders between tang and blade; $4\frac{3}{8}$ long, and not quite $\frac{3}{8}$ across chisel-edge; it resembles a modern carpenter's sash-tool. No. 24, imperfect, a curious chisel-edged tool, with a crutch-like loop at upper end; $4\frac{1}{8}$. No. 25, the large chisel-edged tool, figured and described at p. 521. No. 26, a long chisel-edged, four-sided piece of bronze; $9\frac{1}{2}$ by $\frac{7}{8}$ in the widest part. The two last rows consist of eleven palstave-shaped chisel-edged tools, varying in length from $2\frac{3}{8}$ to $5\frac{1}{8}$, and of which Nos. 35 and 36, figured on p. 521, are the types.

Of the foregoing, Nos. 6, 18, 19, and 33, were procured with the Dawson Collection; Nos. 8 and 17 were—*Presented by the Shannon Commissioners*; No. 11—*by the Executors of Leslie Ogilby, Esq.*; and No. 25—*by R. Mallet, C. E.* No. 32 was procured from Mr. Murray, of Mullingar.

Tray RR contains forty-three tools, chiefly of the chisel, or celt-shape, numbered from 38 to 80. No. 38, a miniature anvil,

figured and described at p. 523. No. 39, the imperfect socketed portion of a narrow four-sided tool, now $3\frac{1}{2}$. No. 40, a socketed hammer-edge tool, possibly used as a punch; 3 inches long by $1\frac{1}{4}$ broad on the blunt face; found at Abbeyshrule, county of Longford. No. 41, a socketed punch, decorated on the surface, like some of the celts on Tray B. No. 42, a narrow socketed punch; $4\frac{3}{8}$ by $\frac{1}{2}$ across the solid extremity. No. 43, a short socketed punch, broader than the foregoing. The twenty articles following are gouges, numbered from 44 to 63; and the type of which is represented by Fig. 399, from No. 61, on p. 521. With one exception, they are socketed. In No. 48, the gouge-groove ends abruptly at top. No. 49 was found at Moate, in the county Westmeath. No. 52 is a portion of the Dowris find, and was "presented to Dean Dawson by Lord Oxmantown." No. 54, the largest in the Collection. No. 55, with very narrow groove, was found at Monasterboice, county of Louth. No. 59 was procured from the county of Monaghan. No. 60 is not socketed, and resembles a scrape more than a gouge. No. 61, see Fig. 399. No. 62, short, plain. No. 63, a fragment of socketed gouge, or chisel, found near Newry, county of Down, and analyzed by Mr. J. R. Mallet, who described it as made of very inferior bronze, copper-coloured, soft, and "not uniform in texture. It contained cavities produced by air-bubbles in the casting, and was very much corroded; oxide of tin, carbonate of copper, and the red dinoxide of copper, were observable on the surface. Its specific gravity, 7.896." Its composition was—copper, 91.03; tin, 8.39; with traces of cobalt and antimony. See Trans. vol. xxii., p. 324. All the remaining articles, except four on this Tray, are of the broad-axed variety of chisel, furnished with long spikes and collars, and illustrated by Fig. 395, on p. 521. No. 64 is $4\frac{1}{2}$ inches long by $1\frac{7}{8}$ wide in the blade, and has been described as No. 98 in Proc., vol. vii., p. 130. No. 65, and all the others in that row to No. 73 are of the same variety, and vary in length from $3\frac{3}{4}$ to $2\frac{1}{2}$ inches; and many of them closely resemble some of the weapon-tool-celts, both in general outline, and in their recurved points: see, in particular, Nos. 66 and 70, the blade of the former, thin and flat, a miniature of Fig. 281, p. 385. No. 65 is decorated round the collar. The last row contains three long articles of the same variety, of which No. 75 has been figured at p. 521. Nos. 74, 76, and 78 are palstave-

chisel tools, with long, narrow, shallow side-grooves, and broad axe-formed blade, of which No. 79, figured on p. 521, is a typical example. No. 77 was found at Keelogue Ford. To this Tray is also attached No. 80, the thin, flat tool, Fig. 400, described on p. 521.

Of the foregoing, No. 41 was—*Presented by W. R. Wilde, Esq.*; Nos. 44 and 62 formed a part of the deposit made by the Royal Dublin Society; Nos. 45, 47, 67, and 77, were—*Presented by the Shannon Commissioners*; Nos. 50, 59, and 68 were procured with the Dawson Collection; Nos. 56 and 72, with that of Major Sirr; and Nos. 57, 74, and 76, with that of Mr. Murray, of Mullingar. For the remaining bronze articles of the tool species, see description of the Cross-case at p. 552.

SPECIES III.—FOOD IMPLEMENTS.

When a people have not only acquired a knowledge of metal, but have become acquainted with the manufacture of articles of that material, they cease to be nomadic, and become agricultural,—tilling, sowing, and reaping,—and do not altogether depend on the produce of the chase, or fishing, for their subsistence; although both pursuits continue to afford food, as well as amusement. The accompanying illustration, drawn the natural size, is from a bronze *Fish-hook*,—in Irish, *duban*,—No. 106, in Rail-case P, the only article of the kind in the Collection.



Fig. 403,
No. 106

The great antiquity of corn in Ireland has been generally acknowledged by archaeologists, and references relating to both wheat and mills are to be found in Irish writings so early as the middle of the seventh century.*

SICKLES—*Corran*—of bronze have been frequently obtained in Ireland, and eleven such articles are displayed on Tray

* See Dr. O'Donovan's papers in the Dublin Penny Journal, vol. i. p. 108 and 282; also the author's Essay on the Food of the Irish in the Dublin University Magazine for 1856; likewise an article on a bronze *fala*, or curved pruning-knife, by Mr. C. C. Babington, in the Report of the Cambridge Antiquarian Society, No. ix.; see also the Archaeological Journal, vol. ii., p. 186; and vol. vii., p. 302.

on the second shelf of the first compartment of the ground-floor, on the north side of the Museum. In shape they vary from a short angular implement, with a slightly curved blade, $6\frac{1}{4}$ inches long, and a through socket an inch and a-half high, of which Fig. 404, from No. 9, is a good example; to a curved diminutive bronze representation of the modern iron reaping-hook, shown by No. 10, Fig. 406, which is slightly imperfect at top, and measures 7 inches round the convex



Fig. 404, No. 9.

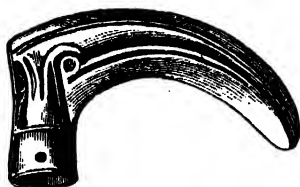


Fig. 405, No. 6.

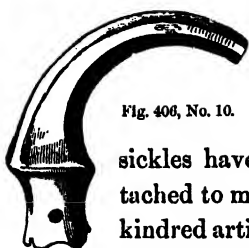


Fig. 406, No. 10.

edge, from the margin of the oval socket to the end of the blade. Of these varieties, there are but two of each in the Collection. The second illustration, Fig. 405, No. 6, is the most beautiful specimen in the Museum, measuring $6\frac{1}{4}$ inches from the point of the blade to the angle which it makes with the oval socket, which latter is 3 inches high. In shape it is the type of the majority of bronze sickles found in this country, but is more highly decorated than any other yet discovered. It was found in the county of Westmeath. These ancient sickles have all rivet-holes, and were probably attached to much longer handles than those used with kindred articles in the present day; several are sharp on both edges. Writers have been in the habit of describing such articles as the sacred sickles, with which the Druids of old cut the mistletoe; but we have no authorities bearing on this subject of sufficient weight to warrant us in assigning any other use than that of corn-sickles to the articles figured and described above. Vallancey has figured an implement like No. 10, and described it as "a small *securis*, called by the Irish a *Searr*, to cut herbs, acorns, mistletoe, &c.; it has a double edge, very sharp."

The Academy's Collection is particularly rich in culinary articles of bronze and brass, including no less than 60 specimens of ancient cauldrons, coolers, pots, skillets, buckets, pans, dishes, ewers, jars, bowls, cups, and other drinking-vessels. They may be arranged into those which were hammered out of single pieces, those formed of several plates riveted together; and the cast-metal vessels, most of which are in high preservation. Nearly all these articles connected with the preparation of food have, for convenience sake, been arranged in the lower glass-case of the Western Gallery, and in the bottom of the first and second compartments on the northern ground-floor. They have been placed according to their several varieties, and are numbered consecutively.

CAULDRONS, &c.,—in Irish *Coiri*,*—are of great antiquity, and from the date of the introduction of the first by the Tuatha De Danaan, as related at page 353, to a comparatively recent period; very frequent mention is made of such articles in our Irish annals and Bardic histories. Vessels of this description were heir-looms in certain families, and formed part of the royal property of our early kings; and some were even made of the precious metals. We read of celebrated cauldrons, with mystical properties, such as Ovid described; or like that which Shakespeare has introduced into the scene of the witches' incantation in *Macbeth*. A magical cauldron is referred to in the description of the destruction of the Palace of Conaire Mor, at Bruighin da Berga, A.C. 25. Another was the cauldron called the "*Caire Ainsicen*," belonging to Eoghan Buihe, one of the Dalriadic or Iberno-Scotic kings, who held his court at Dunstaffnage, in Lorne, "which was used to return its own proper share to each, and no party ever went away from it unsatisfied; for, whatever quantity was put into it, there was never boiled of it, but what was sufficient for the company, according to their grade and rank."† In the ancient account of the ori-

* *Coire* in the singular glosses *Cullendarium*.—See Stokes' *Irish Glosses*, p. 90.

† See *Battle of Magh Rath*,* O'Donovan's translation for *Irish Archaeological Society*, p. 51.

gin of the Boromean Tribute, preserved in the Book of Leinster, we read of bronze cauldrons for brewing the ale of Magh Moain and others, so large that two sheep could be boiled in them together; another, at Tara, it is said could contain twelve hogs, &c. In A. D. 599, the monarch Aed, son of Ainmire, marched into Leinster with an invading army, and encamped near Baltinglass in the county Wicklow, and in the immediate vicinity of the residence of Bran Dubh, the Leinster King. The latter was visited by his relative, St. Moedóc, of Cluainmór, in Carlow, who presented him with a sword, a shield, a cauldron, and a flesh-fork. Conlaedh, the artificer of St. Bridget, made the fork; and Gressach made the cauldron for the son of Niall Laeghaire, by whom it was given to Dubthach of Dublin, the chief poet of Erin, who gave it to his relative, Bishop Fiacc, from whom it came in succession to Dunlang, after whom it was inherited by Aihill, who bequeathed it to Moedóc, the person that gave it to Bran Dubh.* The history of other vessels, of a like nature, has been preserved. Cauldrons and vats are mentioned in the Book of Rights, as part of the tribute paid by one king to another; and in the will of Cathar Mór, now preserved in the Book of Lecan, reference is made to a certain cauldron possessing wonderful mystical properties. When Philip of Worcester, then Lord Deputy in Ireland, pillaged Armagh, in 1184, he carried off the friar's cauldron.

The following illustrations represent typical specimens of ancient culinary vessels found in Ireland. Figure 407 is drawn from No. 12, the largest many-pieced cauldron in the Collection, measuring 19 inches across the mouth, 12 in depth, and 67 in girth. It is composed of a number of pieces of thin bronze, each averaging $3\frac{1}{2}$ inches broad, and decreasing in length near the bottom. These plates bear the marks of hammering; and are joined at the seams with rivets, averaging about half an inch asunder; these rivets have sharp conical

* Extract from the Book of Leinster, supplied by Mr. Curry.

heads externally, and some were evidently ornamental, as they exist in places where there are no joinings; and in the circular bottom portion, they are large and plain. The upper margin of this vessel is $2\frac{1}{4}$ inches broad, and decorated with a



Fig. 407. No. 12.

punched or hammered ornament, like that seen in some of the gold tiaras, and resembling the modern process of corrugating. Its outside edge, next to the solid hoop, has a double

line of perforations in it. This vessel has large solid bronze handles, attached by ornamental staples to its rim. Such bronze rings, if found by themselves, might readily be mistaken for armillæ. It was—*Deposited by the Royal Dublin Society.*

Many such vessels have been found in Ireland at different times, and several were exhibited at Belfast, in 1852. It was in a vessel of this description that a part of the great collection of articles of a peculiar kind of bronze was discovered at Dowris.* See Proceedings, vol. iv., p. 360. One of the most perfect cauldrons found in Ireland is that described by Mr. M'Adam, in his learned and ingenious paper on "brazen cauldrons," published in the *Ulster Journal of Archæology*, vol. v., p. 82; the following extract from which applies with equal force to similar vessels in the Academy's Collection:—"The thinness and evenness of the plates, the manner in which these are strengthened by the corrugated rim, and the ingenious mode of fixing the handles so as to

* See Mr. Cooke's description, in the Proceedings, vol. iv., p. 425. See also a drawing of the vessel he described in the Academy's scrap-book, p. 46. See likewise the cauldron, figured in Shirley's "History of the Territory of Farney." A very fine cauldron, the property of Lord Bandon, is preserved at Castle Bernard. Similar vessels have been found in Wales, and also in Scotland—see *Prehistoric Annals*, p. 274.

equalize the strain when lifting the cauldron full of liquid—are proofs of very considerable mechanical skill. The extreme thinness of the metal, which exceeds anything of the kind used in our modern cooking vessels, may be taken, perhaps, as a proof of the costly nature of the material; but it is also a proof of the skill and judgment of the workman. The labour and dexterity required for hammering out the bronze into such thin and regular sheets must have been very considerable. Their surfaces are almost as even and level as that of modern sheet brass, produced with all the advantage of machinery; and there is no doubt that the metal thus hammered has more tenacity than any rolling process would have given to it."

The two next engravings, drawn from Nos. 13 and 14, also in the lower case of the Western Gallery, represent articles of the same variety as the foregoing, but somewhat different in size and shape. No. 13 is a conical vessel, formed of eight sheets of thin bronze, joined with the same kind of conical rivets, except in the attachment of the circular bottom-piece. It is 14 inches wide at the mouth, $12\frac{1}{2}$ deep, and 50 in girth. The rim is plain, and strengthened by a strong bronze wire passed within its edge. The massive handle-

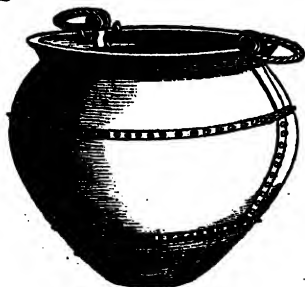


Fig. 408, No. 13.

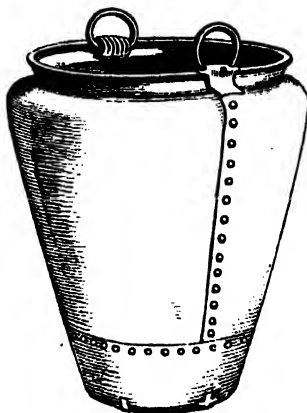


Fig. 409, No. 14.

ings are decorated, and attached to the vessel by ornamental staples, with stout strips passing down, both within and with-

out. It bears the marks of the long-continued action of fire. No. 15, Fig. 409, is a high bucket, or cauldron, formed originally of three sheets of very thin Dowris-coloured bronze, one for the circular bottom, and two for the side and rim, where they are turned round a stout bronze ring—all fastened by large flat-headed rivets—18½ inches deep, 15 wide in the mouth, and about 56 in girth round the broadest part of the shoulder. It has two slight four-edged handle-rings, passing through very large decorated loops turned inwards, but overlapping the slightly everted edge, so as to strengthen the rim, as well as to give security to the purchase. It originally stood on six feet, each forming an inverted cup. This specimen is now imperfect in several places, and no article in the Collection exhibits the same amount of repair, as shown by the great number of places in which it has been patched; and from the care taken in the mending, it is manifest that it must have been intended for holding fluid. The bottom portion is one of the most ingeniously hammered pieces of bronze in the Collection. This article has been analyzed by Mr. J. W. Mallet, who thus reports upon it:—"From its size, and the thinness of the plates of which it was made, it displays a degree of skill and neatness in the treatment of bronze most remarkable, as existing at so early a period as this vessel probably belongs to. The metal is not very hard, but extremely tough, and is of a beautiful rich bronze-yellow colour ('gold bronze'), scarcely altered by time. Specific gravity, 8.145." Composition—copper, 88.71; tin, 9.46; lead, 1.66; with a trace of iron. See Transactions, vol. xxii., p. 324.

Of these riveted, many-pieced vessels there are six in the Collection, all arranged in the Western Gallery.

The second variety of antique bronze vessels consists of those in which a single plate of metal was hammered into a shallow pan or dish, as shown by the accompanying illustration, drawn from No. 16. It measures 25½ inches from out to out of the open, and is 9½ deep; is in the most perfect state of

preservation, smooth on the outside, but presenting a number of linear indentations radiating from the centre, apparently

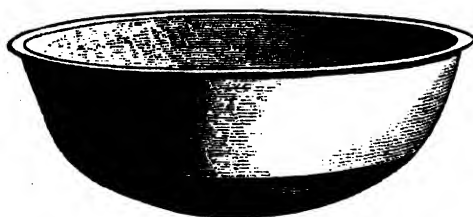


Fig. 410. No. 16.

the tracks of the tool by which the metal was made to assume its present shape; the lip is an inch wide, and rudely decorated with crescentic punched marks. It

was found seven feet deep in a turf bog at Lahern, parish of Killorglin, county of Kerry, in 1849, and—*Presented by Rev. W. De Moleyns.* Nos. 18 and 19, also in fine preservation, resemble the foregoing in all respects, except in size. There are altogether twenty specimens of single-piece bronze vessels, not cast, in the Collection. Among the most remarkable articles of this sub-variety is a beautiful thin, saucer-shaped vessel, No. 28, which has been cleaned to show the rich reddish-golden colour of the bronze; it was hammered out of a single piece of metal; decorated upon the internal surface with a number of curved tooled indentations; it is $7\frac{3}{4}$ inches wide,



Fig. 411. No. 28.



Fig. 412. No. 30.

and has two small holes in the rim, as if for suspending it to a wire. It was found in the crannoge of Cloonfinlough, county Roscommon, described at p. 226.—*Presented by the Board of Works.* Figure 412 is drawn from a very gracefully shaped vessel, exquisitely wrought out of a single piece of sheet brass, as thin as ordinary writing paper, with a globular bottom, and having the handle strengthened by a flat T-shaped projection, extending both above and below its edge; a double

corrugated indentation passes beneath the lip. It is $7\frac{1}{2}$ inches across the mouth; and the handle, which is 6 inches long, has a hammered-up ornament within the circular expansion at its end. This vessel was found in the River Shannon, at Bishop's Island, between the counties of Roscommon and Westmeath.—*Presented by the Shannon Commissioners.* Fig. 413 is a very beautiful cast bronze cup, or drinking vessel, of bright-yellow metal, resembling in shape the wooden article figured at page 211, and having a decorated handle, terminating in an animal's head at top. This is one of the most classic bronze articles in the Collection.

It is $5\frac{1}{2}$ inches in the long diameter of the oval mouth, and $2\frac{7}{8}$ deep; and was found in the river, between Lough Marraw and Lough Oscar, near Keshcarrigan, county Leitrim.

—*Presented by the Board of Works.*



Fig. 413. No 37.

Cast-metal vessels, of both bronze and brass, have been found in great numbers throughout the country, and are frequently presented for sale. They appear to have been in common use before the general introduction of similar articles of cast-iron; and, in addition to the foregoing, chiefly consist of Pots—of which there are seventeen specimens in the Collection, numbered from 38 to 54, and arranged partly in the Western Gallery, and partly in the lower space on the northern side of the Museum, except the two largest, which stand at the foot of the North-western Gallery stairs. In shape these vessels differ from modern iron pots, in their greater height and narrowness, and in some examples by the length of the upper member; a few, however, are quite globular. In size they vary from a capacity for holding one quart to nine gallons of fluid. That here figured, although not by any means one of the oldest, is remarkable for its great size, peculiar shape, external ornamentation, and having a spout inferiorly, showing its probable use in brewing or dis-

tillation.* This vessel of compact sonorous brass is one of the largest and most perfect ever found in Ireland; it rests on three decorated feet, stands 26 inches high, is $68\frac{1}{2}$ in girth round the widest portion, and 14 across the mouth. A large projection, attached to the bottom, shows where the metal was poured into the mould. The spout is 4 inches long, and the legs 9 high. The letters and date, 1640, are in the same relief as the other decorations on the external surface. It is said to have been



Fig. 414. No. 47.

found in the neighbourhood of Macroom, county Cork.

The three small vessels figured below, from Nos. 60, 58, and 55, in the bottom space of the first compartment in the northern side of the ground-floor, and of rather classical shape,



Fig. 415, No. 60.



Fig. 416, No. 58.



Fig. 417, No. 55.

are good specimens of small metal articles for culinary and domestic purposes, used in Ireland in former times. Figure 415 is drawn from a copper can or ewer, 8 inches high, which was

* See notices of brewing in *Ulster Journal of Archaeology*, vol. vi., p. 286. See also *Annals of the Four Masters*, under A. D. 1406.

—*Presented by the Shannon Commissioners.* Figure 416 is drawn from No. 58, a small bronze globular pot or skillet, in a state of great perfection, with a horizontal handle, 6 inches in length, and bent at end; it is $6\frac{1}{2}$ inches high, and $16\frac{1}{2}$ in circumference. The third illustration is drawn from No. 55, one of three bronze ewers, with decorated spouts, placed in the same locality as the foregoing; it is 8 inches high, and has been mended by rivetted portions attached to the bottom, but has no remains of solder. It was found in a bog at Drumnaspar, parish of Upper Badoney, county Tyrone. For the remainder of the culinary vessels, see details of these articles from pages 539 to 546, and also p. 553.*

ARTICLES CONNECTED WITH DISTILLATION.—The frequent and very early notice of cups, drinking-horns, and other vessels of a like character, show that the Irish were acquainted with other beverages than milk and water. Mead, or *Meth-glin*, chiefly derived from honey, was used in very remote times; and popular tradition asserts that *Heather-beer*, said to have been introduced by the Northmen, was a common drink in the middle ages. Some of the decorated drinking vessels, already alluded to at page 265, were, it is said, employed for “quaffing mead.” In Irish writings of the fifteenth and sixteenth centuries, constant reference is made to spirituous liquors, such as *aqua vitæ* [*uisge beathadth*]; and we still possess some remnants of the apparatus for distillation, the knowledge of which process has never been lost, although we have no Irish names for either still or still-worm.† On

* An article like Fig. 416 has been figured by Dr. Petrie in the Dublin Penny Journal, vol. i., p. 84, in illustration of his valuable papers on the Fine Arts which appeared in that publication. A vessel similar to Fig. 417 has been figured by Val-lancey, from a specimen in the Museum of Trinity College. See Collectanea, vol. iv., page 42.

† The earliest notice of distillation in Ireland appears to be that discovered in the Red Book of Ossory, a MS. supposed to be as old as the fourteenth century, in which this passage occurs—“Simple *aqua vitæ* is to be made in the following manner:—Take choice one-year-old wine, and rather of a red than of a thick sort, strong, and

Tray **TT** are six fragments of bronze or brass alembics, or still-heads and worms, numbered in continuation of the food implements already described. Three of these are still-worms, the most perfect of which, figured below, is complete, and consists of eight convolutions, of soldered brass piping, joined at acute angles, each pipe about half an inch in diameter. They are fastened down to two strong flat bars by means of bent straps and square-headed rivets, the latter occupying the spaces between the pipes. The length of each convolution is

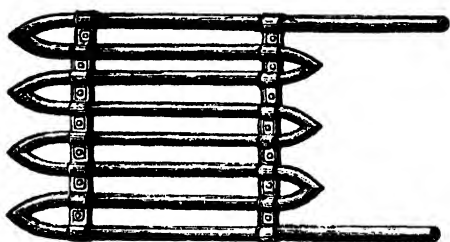


Fig. 418, No. 67.



Fig. 419, No. 70.

10 inches, and the total breadth of the article, 7. One extremity of this ends in a kettle-spout shape, evidently for the delivery of the condensed liquor; the other end was probably attached to the still-head. Fig. 419 is drawn from No. 70, a still-head about 4 inches high, and 11

long in the horizontal tube, the small end of which was inserted into one of the extremities of the worm. About midway down the rather conical head is attached a broad square flange, $3\frac{1}{2}$ inches wide, which acted as a stop, and prevented the head passing down too far into the still. The upper

not sweet, and place it in a pot, closing the mouth well with a *clepsydra* made of wood, and having a linen cloth rolled round it; out of which pot there is to issue a *cavallis*, leading to another vessel having a worm [*serpente*.] This latter vessel is to be kept filled with cold water, frequently renewed when it grows warm, and the water foams through the *cavallis*. The pot with the wire having been placed previously on the fire, distill it with a slow fire until you have from it one-half of the quantity of wine that you put in." I am indebted to the Rev. James Graves for the foregoing extract. It has also been published in the *Ulster Journal of Archaeology*, vol. vi., p. 285.

angle, between the head and horizontal tube, has been strengthened by a stay of metal, which is perforated both for lightness and ornament. The whole apparatus is exceedingly small and delicate. We have no precise knowledge either as to the shape of the still, to which these objects were ancillary, or of the method employed for distillation.* Both the articles figured above were found at the depth of four feet in that part of the Bog of Allen near Ballykillen Hill, King's County, and were—*Presented by William Watson, Esq.*

SPOONS (*Sponóga*) and LADLES (*Liacha*)—amounting to thirty-three specimens—are arranged on Tray **UV**, and illustrated by the four following types. With few exceptions,



Fig. 420, No. 73.



Fig. 421, No. 73.



Fig. 422, No. 83.



Fig. 423, No. 74.

however, none of these are of great antiquity compared with other bronze articles in the Collection. Figure 420 is drawn from No. 73, a rude massive copper spoon, thick and undecorated in the handle, the only one of this material in the Collection; $9\frac{1}{4}$ inches long, and 2 broad in the bowl. Figure

* The two articles represented above have been figured by Mr. Clibborn in the *Ulster Journal of Archaeology*, vol. vii., p. 88. See also Moorewood's *Treatise on Distillation*; and the "*History of Inebriating Liquors*." The most perfect specimen of ancient still-head and worm is that in the Museum of Trinity College; the portion of tube ending in the head measures 4 feet.

421 represents an exceedingly thin ladle of bright-yellow brass, No. 78, which measures $13\frac{1}{4}$ inches in length, and $4\frac{1}{4}$ across the bowl; has an everted lip, which is prolonged into a T-like flange that runs round the handle, similar to that in Fig. 412, and was evidently intended for giving strength to that portion. From the paper-like thinness of the metal, it could scarcely have been cast in a mould, although it does not bear marks of hammering. Of this sub-variety there are three specimens in the Collection, see p. 545. It was found in the bed of the Shannon, at Grose's Island, near Carrick, county Leitrim, in 1847, and was—*Presented by the Shannon Commissioners*. No. 93, Fig. 422, is one of those middle-age spoons with long, slender, round handles, terminating in decorated knobs or figures, and known as "Apostle Spoons," of which there are fourteen perfect and six imperfect examples on Tray **UU**; it is $5\frac{1}{2}$ inches in length. The fourth figure is drawn from No. 74, a comparatively modern article, $6\frac{1}{2}$ inches in length, highly decorated on both sides, and socketed for the insertion of a wooden or bone handle. For details of spoons, see page 545.

Bronze or brass knives have not yet been received into this Collection; and we have not heard of any being discovered in Ireland. The only other food implement of antiquity, to which reference has been made in Irish history, is the celebrated spit, called the *Bir Deckin*, referred to in Dr. Petrie's Essay on the "History and Antiquities of Tara Hill," see Transactions, vol. xviii., p. 212. There are three nut-crackers of brass in the Cross-case, described at page 553.

The following are the details of the Culinary articles:—

BRONZE, V.—GROUND-FLOOR, NORTH SIDE; FIRST COMPARTMENT.

FIRST COMPARTMENT.—SHELF II., Tray **SS**, contains eleven sickles; numbered from 1 to 11, and varying in length of blade from $4\frac{1}{2}$ to 6 inches. No. 1, angle-bladed; imperfect at point; socket $2\frac{1}{2}$ inches long, and not thorough; rivet-holes as in all the other speci-

mens; a grooved cast ornament on side of blade; found in the county Cavan. No. 2, perfect; slender; of bright gold-coloured metal; blade $4\frac{3}{8}$ from its point to the angle formed with upper part of socket; has a midrib, and side-bevels, like some of the curved swords; socket oval, and $1\frac{1}{2}$ long; both edges of blade are remarkably sharp. No. 3, imperfect at point of ornamented blade; socket 3 inches high, with raised fillet round the margin. No. 4, perfect; of same description as No. 2, but blade and socket form a more acute angle. The blade is 5 inches in length, and traversed by a raised ornament, passing round the oval socket, which is $2\frac{3}{8}$ high, and has a projecting margin inferiorly. No. 5, very plain, and more curved than any of the foregoing; $4\frac{1}{2}$ in blade; oval socket $2\frac{1}{8}$ high. No. 6 is figured and described at p. 527. No. 7, rude, plain, imperfect in socket, which turns round into hooked blade, which latter is $4\frac{5}{8}$ long; found in the county Tipperary. No. 8, fractured; socket $1\frac{1}{2}$ in length; thorough length from point to posterior edge of imperfect socket, $4\frac{3}{8}$; large rivet-holes; resembles No. 9. No. 9, ditto, figured and described at p. 527. No. 10, figured and described at p. 527. No. 11, reaping-hook-shaped, like No. 10, but somewhat different in curve of perfect blade; much corroded; measures $7\frac{3}{4}$ on convex edge; socket imperfect.

The Culinary Vessels referred to at p. 528 here follow in succession, and are numbered consecutively with the sickles. The collection of these articles extends from those in the first bottom glass-case in the Western Gallery, Bronze II. and is continued under Bronze III. and IV. to the foot of the North-Western Staircase, and throughout the bottom shelf of the first compartment on the northern side of the ground-floor of the Museum to the adjoining Cross-Case.

BRONZE, II., III., AND IV.—WESTERN GALLERY, LOWER CASE. *

LOWER CASE.—Bronze cauldrons, and other many-pieced riveted vessels.—No. 12, the fine bronze cauldron figured and described at p. 530. No. 13, a smaller article of the same variety, more conical; figured and described at p. 531. No. 14, a larger and ruder specimen of the same form, with flat unornamented rivets joining the four large plates; heart-shaped; decorated with grooved marks under the lip; mended in several places; 19 inches wide in open; about

16 deep, and 32 in girth; massive ring-handles, each $4\frac{1}{2}$ inches in diameter. The spear No. 6 was found in this vessel. No. 15, the large conical vessel, like a plate-bucket, figured and described at p. 531. No. 16, a single-piece dish or pan, figured and described at p. 533. No. 17, another specimen of the same variety, but smaller and shallower; radiating marks on bottom; lip plain, and patched in two places; $19\frac{1}{2}$ from out to out, and 6 deep; found in a deep bog at Sallow-Glin, near Newtown-Sandes, Barony of Iraghticonnor, county of Kerry, and—*Presented by William Sandes, Esq.* (see Proceedings, vol. vi., p. 48). No. 18, very perfect; about same size as former; tool-markings very distinct; decorated lip; $19\frac{1}{2}$ in diameter by 6 deep; found in the bank of the river between Bray and Enniskerry. No. 19, ditto, but flatter in the bottom, and sides more upright; mended in several places round edge; 22 by $16\frac{1}{2}$. No. 20, a small specimen, much worn in bottom; $17\frac{1}{2}$ by $5\frac{1}{2}$ deep. Found at Cornacarrow, near Jamestown, county of Leitrim.—*Presented by Shannon Commissioners.* No. 21, the bottom portion of a large vessel of very thin sheet brass, having on the outside the marks of punching and hammering, like those on No. 16. No. 22, the upper portion of a large cauldron of thin sheetbrass, hammered out of a single piece, and not bearing any ostensible marks of joining; no bottom; looks like top of such a vessel as No. 14; four rivet-holes on each side of upper margin, mark where the staples which held the handles were affixed; 17 in diameter; covered with a whitish incrustation, from lying in water for a great length of time; found at Cloonfinlough, county of Roscommon (see p. 226).—*Presented by Board of Works* (see Proceedings, vol. v., App.). No. 23, a circular brazen dish, decorated on the lip like No. 17; differing in material from any of the foregoing; complete, but much battered; $16\frac{1}{2}$ across mouth; found in a morass, near the spot crossed by the Williamite army at Aughrim, county of Galway, in 1691; believed by the finder to have been part of a kettle-drum.—*Presented by W. H. Hartigan, Esq.* (see Proc., vol. vii., p. 109.) No. 24, a circular brass vessel, hammered out of a single piece. The sharp edge of the upper margin and the rivet-holes around it show that it either had an attached rim, or formed the lower portion of a larger vessel; rudely patched on one side; 12 by 6. No. 25, a similar article, but somewhat smaller, and evidently much used in former times; made of a

single sheet of thin brass, which has been cut in several places, probably with the intention of its being used for other purpose; 9 wide. No. 26, a small dish, formed of one sheet of thin bright brass; everted lip; in imperfect preservation, covered externally with an incrustation from fire; $10\frac{1}{2}$ wide in mouth, and about $3\frac{1}{2}$ deep; found at old castle of Kiltubrid, King's County, in peaty soil, five feet under surface.—*Presented by Board of Works* (Proceedings, vol. v., App. p. 57). No. 27, a small circular cup-like vessel; formed of a piece of thin sheet brass; surrounded at top by a number of rivet-holes, in some of which the studs still remain. No. 28, the beautiful, cleaned bronze bowl, figured and described at p. 533. No. 29, a circular vessel, with handle, of the saucepan-shape; hammered out of a single piece of brass; round in bottom; everted lip, with double corrugated indentation on side, below that part; $6\frac{1}{2}$ across mouth; handle 6 inches long; found in River Blackwater, a mile below Charlemont, between the counties of Armagh and Tyrone.—*Presented by Board of Works*. No. 30, another article of a like description, figured and described at p. 533.—*Presented by Shannon Commissioners*. No. 31, a stout circular brass vessel, quite perfect, hammered out of a single piece; sides contract to everted lip; $10\frac{1}{2}$ wide, and $4\frac{1}{2}$ deep. No. 32, a large greenish-yellow brass pan, or basin, formed of two pieces, the bottom, and the rim with its lip, joined by mutual interlapping, like that employed in the manufacture of tin-ware; joining of side-piece effected by stout rivets; slight crescentic hammered ornament round broad horizontal edge; patched in several places round the bottom; $14\frac{1}{2}$ from out to out, and about 4 deep. No. 33, a shallow single-piece bowl of stout bronze; $9\frac{2}{3}$ in diameter. No. 34, another vessel of the same description, formed of thin sheet brass; very imperfect; originally of two pieces, the bottom, and the side and lip; 4 high, $5\frac{1}{2}$ wide; patched with very rude rivets; found, filled with coins, under a mound at Sheemore Hill, barony and county of Leitrim; given to Dean Dawson (with whose Collection it was procured) by—C. D. Latouche, Esq. This article, and No. 32, properly belong to the many-piece rivetted bronze articles, but are placed here for convenience. No. 35, a bronze pan, with broad lip and raised centre, probably cast; 14 inches in diameter, and 3 deep. Its history is unknown. No. 36, another vessel of the same description, but ham-

mered out of thin metal; margin of broad lip and bowl indented; 16 in. diameter by $2\frac{1}{2}$ deep.

The true cast bronze vessels commence here with No. 37, the beautiful bowl, of classic shape, figured and described at p. 534. The following sixteen articles are bronze pots, of various sizes, each standing on three legs:—No. 38, a globular cast metal pot, wanting one leg; $11\frac{1}{2}$ inches high, and 9 wide in the mouth.—*Presented by Arthur A. Nugent, Esq.* No. 39, ditto, with wide handles, defective in lip; $12\frac{1}{2}$ high, $9\frac{1}{2}$ across mouth. No. 40, like a modern pot, with small handles attached below rim; perfect, with the exception of one foot; $11\frac{1}{2}$ high, and the same wide. Found with No. 43 in Lough Ramor, near Virginia, county of Cavan. Both—*Presented by Lord Farnham.* No. 41, a large metal pot; wide at bottom; perfect; sides turning gradually into rim; feet decorated; three raised lines spread from each foot over bottom; $12\frac{3}{4}$ high, and 13 wide in mouth. No. 42, another, almost identical in shape, ornament, and size. Both have ridges round their top margins. Nos. 43, 44, and 45, all of the same variety, are placed in the bottom of the third glass-case under the Spears; BRONZE, IV. They are wide at the bottom, narrowing towards the top, with high feet. No. 43, perfect, has three transverse raised lines on side; trident-shaped ornaments spring from the base of each leg; angular handles attached between junction of rim and conical pot; $15\frac{3}{4}$ high, and 12 across mouth. Found and presented along with No. 40. No. 44, a very perfect specimen, in fine preservation, similar to foregoing in almost every particular, but somewhat higher in legs; upper members of handles slope downwards; $16\frac{1}{4}$ high, 12 in mouth. This vessel was recently sold to a brass-founder in Dublin as old metal. No. 45, a rare and peculiar specimen, which originally stood on three very high legs, one only of which now remains; very flat at bottom; three broad, raised bands encircle the side; handles differ from all other specimens, except No. 51, in forming graceful loops instead of acute angles; 18 high, $2\frac{1}{2}$ wide; defective in lip.

Nos. 46 and 47 stand at the bottom of the north-western stair-case. - The former a very fine boiler, in the highest state of preservation, with broad bottom narrowing towards the top, like No. 47; is $64\frac{1}{2}$ inches in girth, 21 high, and $13\frac{3}{4}$ across the mouth; three raised lines encircle the side of the vessel externally, and at top are

the letters AD. It was originally intended to have a spout, and a metal plug marks the site of that aperture; the legs are decorated with three lines, which spread over the vessel to the central bar. In the Sirr Catalogue it is described as having been obtained from a bog at Lowtown, county of Westmeath. No. 47, the large brewing boiler figured and described at p. 535.

BRONZE, V.—GROUND-FLOOR, NORTHERN SIDE, FIRST COMPARTMENT.

LOWER SHELF.—No. 48, a small bronze pot, imperfect originally; mended in the bottom by rivets; $9\frac{1}{2}$ high, 10 across mouth (Dawson). No. 49, ditto, also imperfect; $8\frac{3}{4}$ high, and 10 wide. No. 50, ditto, but more perfect, and of very thin metal; $9\frac{1}{2}$ high, 10 across mouth.—*Presented by R. W. Reynell, Esq.* No. 51, a very perfect bronze pot, or skillet, with three elevated lines on side, and also decorated on the lip; handles round at angles; $8\frac{1}{2}$ high, $9\frac{3}{4}$ wide across mouth. The three next specimens are globular. No. 52 stands on three legs, imperfect at top, mended in several places; 31 inches in girth (Dawson). No. 53, globular; defective on side of lip; $9\frac{1}{4}$ high, 30 in girth (Dawson). No. 54, ditto, also imperfect in lip; it is $27\frac{1}{2}$ in girth. The cast metal pots end here, and the remaining articles are of a different variety of vessel. No. 55, a cast metal ewer, figured and described at p. 535. No. 56, ditto, imperfect at one side, decorated spout; $7\frac{1}{2}$ high; found at Lecale, and—*Presented by Lord de Roose.* No. 57, ditto, of a larger size, perfect, one leg apparently attached subsequent to casting; spout decorated in the form of an animal's head; $10\frac{1}{2}$ high; found at Swords. No. 58, a small globular bronze skillet, figured and described at p. 535. No. 59, a copper jar, formed of three pieces,—the body of the vessel, the bottom, and the handle, the latter fastened by rivets; the seam in the back brazed, and the bottom inserted by interlapping, like modern tin-work; it is 13 inches high, and 27 in girth; it was probably originally intended for a powder vessel, and, as such, was used by the insurgents at the battle of Vinegar Hill; it is much battered on one side, said to have been caused by a shot. No. 60, a copper jug, figured and described at p. 535. No. 61, a brass mortar, decorated on the outside, solid handles; 6 high, and $7\frac{1}{2}$ wide at mouth; marked with raised cast letters A K. No. 62, bottom fragment of a cast bronze vessel; found in River Deel, county of Meath.

—*Presented by Board of Works.* No. 63, a highly ornamented piece of bronze, fractured in centre; $10\frac{1}{2}$ inches long; evidently the handle of a skillet. No. 64, a bronze curved moveable small pot-handle, twisted in the torque fashion; a very rare culinary article. Nos. 65 and 66 are two solid, rather conical pieces of finely cast bronze; one grooved on the surface, both perforated at chamfered top; apparently moveable pot-legs. For remainder see Cross-case at page 553.

SHELF II., *Tray TT*, contains six articles employed in distillation, and numbered from 67 to 72, in continuation of the culinary vessels already described. No. 67, an ancient still-worm, complete; figured and described at p. 537. No. 68, the fragments of another still-worm, somewhat larger in the tubing, and consisting of two and a half turns; fastened to the back-stay by means of wedge-like pieces of metal, which originally held in its place a thin overlapping strap; the back-stay is perfect, and measures $9\frac{1}{8}$; found in Inchmore Island, Lough Ree, Shannon. No. 69, fragments of a still-worm, much broken, and consisting of portions of five tubes, and the two back-stays arranged on the same principle as the two foregoing articles; the tubing is very thin, and joined at the angles by a more perfect and elegant form of brazing; it was found in 1828 beneath the foundation of an old castle of the O'Dowds, at Carrownrush, parish of Easky, county of Sligo. No. 70, the still-head figured and described at p. 537. No. 71, a specimen of bronze tubing of the same diameter as that in No. 67; 13 inches long; fractured; it appears more likely to have formed part of a worm than a fragment of a still-head tube. No. 72, the tube of a still-head precisely resembling that of 67; the conical end of the tube and flange where it was inserted are the same in both specimens; $12\frac{1}{2}$ inches long.

Tray UU contains thirty-three spoons and ladles, numbered from 73 to 105. No. 73, a rude copper spoon, figured and described at p. 538. No. 74, an ornamented spoon, figured and described at p. 538. No. 75, a tinned brass spoon; $6\frac{1}{2}$ inches long; having a curious trade-mark on the inner side of the bowl, consisting of three spoons, enclosed in a circle, evidently struck after casting; described as 52 in Proceedings, vol. vii., p. 161.—*Presented by Dr. Ringland.* No. 76, a large single-piece ladle, imperfect in bowl; $12\frac{1}{2}$ long, 4 wide; found in townland of Ardress, near Kesh, county

of Fermanagh.—*Presented by Board of Works.* No. 77, a small brass ladle, with cup-like bowl riveted to handle. No. 78, a ladle, figured at p. 538. With few exceptions, all the remaining spoons are very thin and shallow in the bowl, and have slender handles. No. 79, imperfect in both bowl and handle. No. 80, of remarkably thin brass, perfect in bowl, but wanting greater portion of handle. No. 81, ditto. No. 82, handle of spoon, with circular stud at top. No. 83, ditto, with portion of bowl attached.—*Presented by Very Rev. Dean Butler.* No. 84, fragment of a circular spoon-handle, with decorated top. The two next rows contain fourteen complete spoons of the fashion called Apostle Spoons, with wide shallow bowls, slender stems, and decorated tops; in length they vary from $5\frac{1}{2}$ to 7 inches, and, with the exception of No. 90, which has a figure at top of stem, all the handles terminate in circular seal-like projections. No. 93 has been figured and described at p. 538. The last row consists of articles of a ruder description, and, with one exception, have flat handles. No. 99 was found at Ballyhennan, barony of Fassadinan, county of Kilkenny. No. 102 was—*Presented by Lord Farnham.* In No. 103, the shank is grooved, like that of a marrow spoon. No. 105, the end of the handle of which is trident-shaped, was, with No. 98—*Presented by the Shannon Commissioners.* Nos. 87, 101, and 104, were procured with the Dawson Collection; and No. 91 was deposited by the Royal Dublin Society.

For remaining Catalogue of food implements, see description of Cross-Case at p. 553.

SPECIES IV.—ARTICLES OF HOUSEHOLD ECONOMY AND DOMESTIC
USE, ETC.

BRONZE articles employed in household economy, or for domestic purposes—not enumerated under the head of utensils used in the procurement or preparation of food, or for the decoration of the person—are here classed together, and consist of needles, or bodkins, tobacco-pipes and boxes, candlesticks, locks, keys, inkstands, &c.; and also razors, tweezers, and such like objects connected with the toilet.

NEEDLES—in Irish, *Miadh* and *Snaithe*, a needle)—of

bronze, may be considered of an age prior to the use of steel for such purposes. Figure 424 represents, the size of the originals, two bronze needles,

Nos. 77 and 78 in

Rail-case P. There

are altogether eighteen bronze needles in the Collection, ranging from $1\frac{1}{8}$ to $4\frac{1}{2}$ inches in length; besides several on Find Trays.

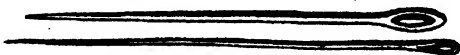


Fig. 424. Nos. 77 and 78.

BRASS TOBACCO PIPES have been occasionally found in Ireland: that here figured the natural size, from No. 4, on Tray **vv**, is curiously formed out of two symmetrical portions, either cast or struck in a mould, and then brazed together above and below.

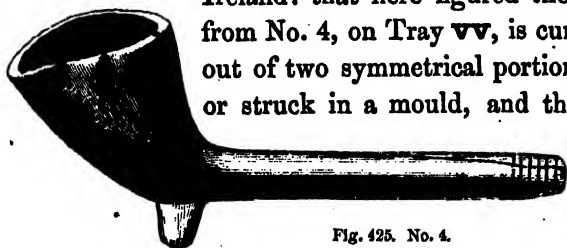


Fig. 425. No. 4.

Tobacco-boxes, either cast, or manufactured out of thin sheet brass, with removeable or hinged lids, generally oblong in form, averaging about 6 inches in length, and embossed or engraved with various devices on the exterior, have been found in considerable numbers in Ireland, and presented at different times to the Academy. Most of them are Flemish. They appear to have been first introduced about the end of the seventeenth century. There are thirteen of these arranged on Tray **vv**.

Bronze or brass candlesticks of sufficient antiquity to be placed in a Museum are generally ecclesiastical, and to be considered under the head of articles of that class. In the first Cross-case on the ground-floor may be seen three specimens of this variety, and some curious antique snuffers, &c.

LOCKS and KEYS [*Glas*, a lock, *Eochair*, a key].—We have no ancient stock, door, or box locks of antiquity in the Museum; but there is a large and varied collection of bronze keys, several of which are curiously decorated in the rings. The only antique

brass lock in the Collection is that here figured, the actual size, from No. 111 in Rail-case P.

At first sight, this unique article would appear to be the ring of a brooch, which, in form of ornamentation, as well as shape and size, it greatly resembles. It certainly belongs to the period of the ring brooches; but whether used as a padlock solely, or attached to a pin, is now matter of speculation.



Fig. 428. No. 111.

All the bronze or brass keys, amounting to forty specimens, varying in length from $1\frac{3}{8}$ to $4\frac{1}{4}$ inches, are arranged on Tray **ww**, in the top shelf of the first compartment on the northern ground-floor; for the details of which see page 551. They may be divided into the latch or lifting-key, like, that still in common use in the Orient, and the ordinary warded key, of both which varieties the five following illustrations are

typical examples. Figure 427 is drawn from No. 30, a flat piece of brass; $1\frac{1}{2}$ inch long. Figure 428, from No. 59—*Deposited by the Royal Dublin Society*—is in high preservation, and



Fig. 427. No. 30.



Fig. 428. No. 59.

measures $1\frac{5}{8}$ inches in its greatest length. The three following cuts illustrate different varieties of the bronze warded-key, with decorated ring. Figure 429 is drawn one-half the natural size from No. 45, a padlock key, curiously decorated at top, and having broad wards cleft along the front edge. It appears to be that found in the Abbey of Thurles, county Tipperary, in 1830, and figured in the *Dublin Penny Journal*, vol. iv., p. 237. No. 54 has a diamond-shaped ring, and is $3\frac{1}{2}$ inches long. No. 46, a very perfect and highly decorated door-key, $2\frac{1}{2}$ inches long, with a

pipe in the shaft;—was found at Tory Island, on the coast of Donegal, and—*Presented by Lord George Hill.* For the details of the other keys in the Collection, see page 551.



Fig. 429. No. 45.



Fig. 430. No. 54.



Fig. 431. No. 46.

TOILET ARTICLES.—Compared with Scandinavian Collections, there are but few toilet articles of bronze in the Museum of the Royal Irish Academy. In the former we find a large assemblage of tweezers, some of them decorated with gold; and knife-like articles in great variety, that appear to have been used as razors, thus showing that the Northmen either shaved or plucked the beard, probably both, whereas the ancient Irish allowed the hair to grow on the face, as intended by nature. Of the three annexed cuts, the first, drawn from No. 104, in Rail-case P, represents a tweezers, 3 inches long, and decorated all over the surface; one of the few articles of this description found in Ireland. It was procured from the Ballinderry crannoge. No. 101, Fig. 433, in Rail-case P, represents the largest specimen of three bronze articles, which, it is conjectured, were used as razors,—in Irish, *Ailtin*. It is all of one piece, $3\frac{1}{2}$ inches long, $1\frac{1}{2}$ wide; has a stout flat stem, decorated on the surface, with



Fig. 432.
No. 104.

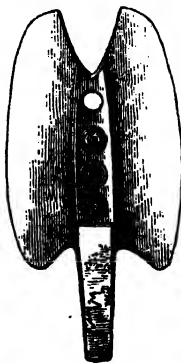


Fig. 433.
No. 101.



Fig. 434.
No. 96.

an aperture near the top; and has exceedingly hard, sharp side-edges; the two other specimens are smaller. There is a large specimen in Trinity College Museum. The third illustration is drawn from No. 96, one of three similar articles, with decorated stems and fork-like terminations, the most rational use of which would appear to be connected with the toilet.

The following list comprises all the articles of Household Economy, except those in Rail-case P, and in the First Cross-case on the northern side of the ground-floor:—

BRONZE, V.—GROUND FLOOR; FIRST COMPARTMENT.

SHELF I., Tray **VV**, contains twenty articles, chiefly connected with the use of tobacco, and consisting of pipe-stoppers, bronze pipes, a decorated pipe-case, and fourteen boxes, principally oblong, and used either for tobacco or snuff; numbered from 1 to 20. No. 1, a bronze pipe-stopper, in the shape of a horse's leg and foot, very well cast. No. 2, a pipe-stopper, resembling the hind-legs of a frog; 3 inches long. No. 3, a pipe-stopper, in the shape of a human leg and foot. No. 4, a bronze pipe; figured and described at p. 547. No. 5, a decorated pipe-case of wood, inlaid with brass; extreme length $8\frac{1}{2}$. No. 6, the bowl of a brass pipe; belonging to No. 5. The remaining articles on this tray are boxes. No. 7, a tobacco box; $6\frac{1}{2}$ inches long, 2 wide, and $1\frac{1}{2}$ high; hinged; top ornamented with the figure of Frederick the Great, beneath which is the inscription, "Fredericus Magnus Borussorum Rex," and the date 1767. No. 8, ditto, of about the same size, copper sides, brass lid and bottom, with several devices of animals, and a Dutch inscription upon it. No. 9, ditto, and of similar materials; the engraved devices on it represent drinking and hunting scenes. No. 10, ditto, ditto, with scriptural devices raised upon the cover; described as a Walloon tobacco-box, with a Flemish inscription; said to have been "found on the person of a soldier slain in the battle of the Boyne."—*Presented by the Rev. W. Thompson* (see Proceedings, vol. vi., p. 10). No. 11, an oval brass tobacco-box; $4\frac{1}{2}$ long; with loops at end, as if for passing a strap through; graven devices; date, 1734. No. 12, a circular puzzle-lid tobacco-box; $3\frac{1}{2}$ in diameter.—*Presented by Major*

General R. K. Birch, R. A. No. 13, a flat oval tobacco-box; $4\frac{1}{2}$ long; engraved device, with Flemish inscription. No. 14, an oblong, four-cornered box, top and bottom copper, sides inlaid with brass; covered with floral devices. No. 15, a snuff-box, brass, with mother-of-pearl inlaid corners, each having a raised figure making up the date 1690, and bearing the following inscription on the side:—"This box was made out of one of the brass cannon used at the siege of Londonderry, and was presented by Mr. Thomas Locke to Henry Maxwell, M.P., December, 1825." On top is a circular piece of mother-of-pearl, with the name "Farnham, 1847," written thereon, and covered with a watch-glass; on the bottom are warlike devices, and the Derry motto, "No Surrender." No. 16, a flat oblong brass box, four corners; $5\frac{1}{2}$ by $2\frac{3}{4}$; on the lid is a view of Haarlem. No. 17, an oval tobacco-box, well made, and in fine preservation, highly engraved; $6\frac{1}{2}$ by $1\frac{1}{2}$; found at Vinegar Hill in 1798. Nos. 15 and 17 were—*Presented by Lord Farnham* (see Proc., vol. iii., p. 529). No. 18, another, of the same shape, but somewhat smaller, and bearing at top, a calculating table, and the date "1497;" found at Bantry Bay, and—*Presented by F. M. Jennings, Esq.* No. 19, an oblong brass box, with embossed cover, having a Dutch inscription; 6 by $1\frac{3}{4}$. No. 20, another Dutch box, very perfect; $9\frac{1}{2}$ inches long, 2 wide; covered with well-graven devices.

Tray WW, contains forty bronze keys, numbered from No. 21 to 60, varying in length from $1\frac{1}{2}$ to $4\frac{1}{4}$ inches. No. 21, the smallest in the collection, rude, flat, no pipe, but instead thereof, a small projection. Nos. 22, 25, 31, 33, and 37, are of the same description. No. 30, is a latch-key, flat, figured and described at p. 548. No. 31, was found at Trim, and—*Presented by Dean Butler*. No. 34, another latch-key, of a different shape, with a ring. Several of those on the two first rows are very rude, and apparently of a great age. In the third row are several remarkable specimens. No. 39 is like the key of a beer-cook. No. 40 resembles No. 59, figured at p. 548. In No. 42, the ward portion is at a right angle with the plane of the ring. No. 44, a bad specimen of the same variety as No. 45, which is figured and described at p. 549. The fourth row contains seven specimens of a larger size than the foregoing, probably door-keys. No. 46, is figured and described at p. 549. No. 51 is decorated on the outer side of the ring. No. 52 is a unique specimen, with a broad ring,

having a square knob attached to its upper edge. No. 54 is figured and described at p. 549. No. 55 is decorated in the ring. No. 56, is a plain, rude specimen, unwarded. No. 57, a very perfect and highly decorated house-key; $4\frac{1}{2}$ long; found in an old castle near Newtownbarry, county of Wexford, and, together with No. 33, was—*Presented by Lord Farnham*. No. 58, a rude latch-key. No. 59, a lifting key, figured at p. 548. No. 60, a rude, bulky latch-key.

FIRST CROSS-CASE, GROUND FLOOR, NORTH SIDE—Contains some articles connected with the species Tools, Food Implements, and Household Economy, which could not be attached to trays. TOP SHELF.—Nos. 81, 82, and 83, are the three bronze adzes described at page 523, and of which the last has been illustrated by Fig. 402. No. 84, a brass button-mould, in three pieces; $7\frac{1}{2}$ inches long, and $\frac{7}{8}$ wide (Dawson). No. 85, a small brass mould for casting coats of arms, referred to at p. 524, and described in Proceedings, vol. vii., p. 130. All these relate to tools. On the SECOND SHELF are several articles connected with Household Economy, and numbered in continuation of the keys on Tray *www*. No. 61, a brass door-bolt; $8\frac{1}{4}$ inches long, by $1\frac{1}{4}$ wide, and $\frac{5}{8}$ thick. No. 62, a brass candlestick; $9\frac{1}{2}$ high, massive, having large holes in the socket, and a broad circular flange about half-way down the pillar; “found in Dunshaughlin bog, county Meath.” No. 63, another candlestick, rudely decorated in the pillar, large holes in socket, no flange; $10\frac{1}{2}$ high. No. 64, ditto, but more modern, and with a slender pillar; $9\frac{1}{2}$ high; found in what would appear to be the remains of a crannoge, at Manorhamilton, county of Leitrim, and—*Presented by Rev. John Hamilton* (see Proceedings, vol. vii., p. 346). No. 65, an antique snuffers, without a top to the box; $6\frac{3}{4}$ long; found in Clonave Island, Lough Derravarragh, county Westmeath. No. 66, an imperfect snuffers, slighter and of more modern form than the foregoing; $6\frac{1}{4}$. No. 67, a small hinged implement, apparently the top of an article for holding a taper; $3\frac{1}{4}$ long. No. 68, a small ounce or steel-yard, a description of instrument very common in Ireland, especially in those parts of the country where flax and yarn were much sold until the compulsory use of the standard weights and measures; quite perfect, beam quadrangular, wanting weight, much worn; $8\frac{3}{4}$ inches in length (Dawson). No. 69, ditto, small, beam circular, complete in all respects, even to the straps, iron

hook, and copper weight; $7\frac{1}{2}$ long. No. 70, the beam of an ounce, $10\frac{1}{2}$ long; found in the river at Athlone, in 1849, and—*Presented by the Shannon Commissioners*—see Presentation Book, p. 62. No. 71, a small circular brass box for holding standard weights; $1\frac{1}{2}$ in diameter; found in the demesne of Stranocum, in levelling the bank of the River Bush, about twenty feet below the surface of the ground.—*Presented by James R. Hutchinson, Esq.* (see Proceedings, vol. vi., p. 161). No. 72, ditto; smaller, and apparently more modern; $1\frac{1}{2}$ wide across lip; found in a bog near Cullybackey, county of Antrim.—*Presented by Rev. Dr. Reeves.* Nos. 73, 74, 75, and 76, are four bronze moveable legs, possibly belonging to ink-stands, the longest measuring $3\frac{1}{2}$ inches, and the shortest 2. For the remainder of articles of this species, see Rail-Case P, at p. 597.

In the bottom space will be found some Food Implements, in addition to those already described and numbered in continuation of the spoons on Tray **UU**, at p. 546. No. 106, a copper cheese-scoop; $5\frac{1}{2}$. No. 107, a rim of thin brass, like top of saucepan; 3; found in River Glyde.—*Presented by the Board of Works.* Nos. 108, 109, and 110, three brass nut-crackers; the latter rude, and decorated with concentric circles, like some of the gold ornaments; $3\frac{1}{2}$ (Sirr); the two others are apparently more modern, and each about 4 inches in length. No. 111, the bottom of an ancient chafing-dish; $4\frac{5}{8}$ in diameter, perforated in bottom. No. 112, ditto, wide mouth, narrow bottom, cast; $5\frac{1}{4}$ at top, 2 deep. No. 113, ditto, imperfect in rim; $4\frac{3}{4}$ by 2. No. 114, ditto, massive, in good preservation, square moveable stud in bottom, as if for stem; $4\frac{1}{2}$ by $2\frac{1}{2}$. No. 115, ditto, plain, perfect; $5\frac{1}{4}$ wide, $2\frac{1}{4}$ deep. No. 116, a bronze chafing dish, tolerably perfect, one handle remaining, aperture in bottom capable of holding vessel No. 114. Nos. 117 and 118, two small thin brass plates, fellows, imperfect in edges; each 6 wide (Dawson). No. 119, the small handle of a brass skillet, like No. 63, only $4\frac{1}{2}$ long.

SPECIES V.—ARTICLES OF DRESS AND PERSONAL DECORATION.

Personal decorations form a large numerical proportion of the bronze articles in the Museum, and at present amount to upwards of five-hundred specimens, excluding those on "finds."

This part of the Collection is increasing daily, each addition presenting some new variety, either of form or ornamentation. It consists of cloak, mantle, or hair-pins, brooches, bracelets, arm-rings, buttons, buckles, fasteners, armour-decoration, and massive rings of different sizes, connected with costume, &c.

For convenience' sake, and in order to display them in the best possible light, according to the present construction of the Museum, the bulk of this part of the Collection, especially the smaller articles, has been arranged on four large Trays, **XX**, **YY**, **ZZ**, and **AAA**, placed between the swords and spears in the Western Gallery. A few may be seen in Rail-case **P**, and the remainder on Trays from **BBB** to **GGG** in the top shelf of the Middle Compartment on the northern side of the ground-floor.

PINS, FIBULÆ, and BROOCHES—styled in Irish, *dealg*, *briar*, *duillenn*, and *brolagha* [spear-like], *es*, *cartait*, *casán*, *roith croir*, *milech*, and *breathnas*—have been discovered in Ireland in greater numbers and variety, and of more beauty in design and workmanship, than in any other country in Europe. In these articles the process of development is displayed in a most remarkable manner; for, from the simple unadorned pin or spike of copper, bronze, or brass, the metallic representation of the *dealg*, or thorn, to the most elaborately wrought ring-brooch of precious metals—the patterns of which are now re-introduced by our modern jewellers—every stage of art, both in form and handicraft, is clearly defined; not one single link is wanting, as may be learned from a glance at those three large Trays, **XX**, **YY**, and **ZZ**, in the Central Compartment of the Western Gallery. In the first stage, all the artist's powers seem to have been exhausted on the decoration of the pin itself, or in the development of the head, which was enlarged and modelled into every conceivable shape, and decorated with a great variety of patterns. When it was scarcely possible to effect further improvement on the head, a shank-ring

was added, either by means of a rivet passed through the head, or a simple loop running through a hole in the neck. In the next step the ring was doubled, or several distinct rings were employed. Then the ring itself became the chief object in this article of personal decoration, and the acus, or pin, was of secondary importance. Finally, the ring was enlarged and flattened out, decorated, enamelled, covered with filigree, and jewelled, until, in those magnificent specimens of silver and gold, and *findruine*, or white metal, found in Ireland of late years, it reached a degree of perfection which modern art can with difficulty imitate.

The three annexed figures, drawn the natural size from Nos. 170 and 184, Tray **xx**, and 399, on Tray **zz**, afford the reader a good idea of the simple pin, with decorated head and shank, used as a cloak-fastener, or for any of the ordinary purposes to which such articles are applied in the present day. Figure 435, from No. 170, on Tray **xx**, represents the length; shape, and style of ornament, in a great number of simple pins. Figure 436 is drawn from No. 184, in which the crooked head resembles that of a horse. Figure 437 illustrates No. 399, on Tray **zz**, one of the most elegant antique articles of its class which has yet come to light. The pin itself is bronze, with an elaborate scroll, formed in the casting; and to a groove in the raised portion which traverses the centre of this indented scroll has been soldered, in high relief, a thin line of silver or white metal. It would not appear that the depressions on each side were filled with enamel; but in No. 383, on the same Tray, a portion of the enamel paste still

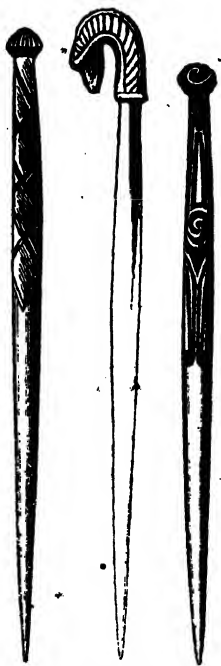


Fig. 435. Fig. 436. Fig. 437
No. 170. No. 184. No. 399

fills up the indented scroll, but it has been constructed on a different plan from that figured above.

By the eight following figures, drawn from Nos. 114, 113, 123, 69, 45, 63, 62, and 66, on Tray **XX**, are shown typical varieties of pin-head ornamentation in articles of this description; they are all drawn the size of the originals. Some of these simple pins, which vary in length from 3 to 12½ inches, have flat shanks, several of which are decorated for about a third of their length. In others the lower third of the pin is quadrangular, and in a few there is an elevation at the juncture of the upper and middle thirds, as is well shown in Fig. 453, on p. 559, like those in several examples of bone pins on

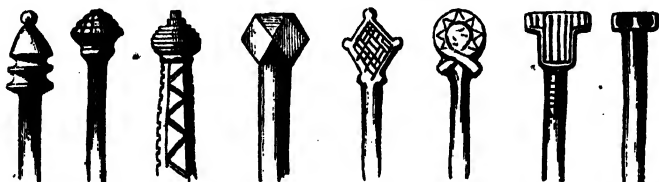


Fig. 438. Fig. 439. Fig. 440. Fig. 441. Fig. 442. Fig. 443. Fig. 444. Fig. 445.
No. 114. No. 113. No. 123. No. 69. No. 45. No. 63. No. 62. No. 66.

Tray **C**, see Fig. 216, page 233. The pins in the foregoing cuts vary in length from 2½ to 7½ inches. No. 69, Fig. 441, was found in the Ardakillen crannoge, and—*Presented by the Board of Works*. Crannoges and street-cuttings have been the principal localities from which these small pins have been procured. No. 123, Fig. 440, was—*Presented by the Shannon Commissioners*. Varied as are the designs and style of ornament shown by the eleven foregoing figures, they scarcely include even the typical forms. So minute is the decoration, both in casting, scroll-work, and inlaying in many of these small pins, particularly of those in the top row of Tray **XX**, that it can only be properly seen with the aid of a large lens.

The next form of pin-head decoration, shown by the three following illustrations, may be frequently observed in Irish

collections. It consist of a circular disk, varying in size from $\frac{3}{4}$ to $1\frac{1}{4}$ inch, with a central conical stud, placed at first horizontally, and then vertically, or on the same line with the shaft, which is bent into its obverse side. Of this variety there are three horizontal, and fifteen vertical specimens on Tray ~~XX~~. At first, the circular top plate was plain, and the central boss small, as in No. 127, which has a stem $11\frac{1}{4}$ inches long, and was probably used in the hair; but as the pattern became the fashion of the day, this portion was decorated both in casting and by the punch and graver, and at the same time the cone was enlarged, as shown by Figure 448, from No. 207. In the Museum of National Antiquities at Copenhagen, there are a few pins of this description (probably Irish)—see Fig. 239 in Worsaae's *Oldsager*—in one of which the bronze disk is covered with a thin plate of gold pressed into all the lines of the ornament on the plate,—a form of jeweller's work specially alluded to in our annals, where Ucadan is said to have covered brooches with gold,—see page 354. Some of



Fig. 446. No. 127.



Fig. 447. No. 128.

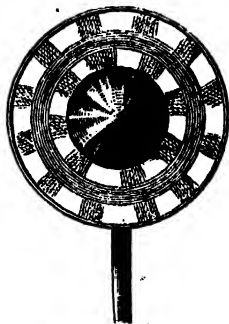


Fig. 448. No. 207.

these circular-headed pins are very long, as in No. 128, one-third the true size, which measures $13\frac{1}{4}$ inches, but No. 207 is only $5\frac{1}{4}$ inches in the stem and $2\frac{1}{4}$ across the top. The same form was repeated in those manufactured from bone: see Fig. 213, page 234. The foregoing are drawn one-half the natural size; other specimens have been found in Ireland with the

disks of greater magnitude. See Dublin Penny Journal, vol. iv., p. 45.

By the four following cuts, drawn to a scale of one-half the true sizes, are illustrated other forms, differing somewhat in shape from the former. No. 216, Fig. 449, on Tray **XX**, is a small pin, $4\frac{1}{2}$ inches long, with a head similar to that in Fig. 448, but having the central mamillary projection larger, and the boss proportionably less. No. 498, on Tray **ZZ**, Fig. 450, which is 5 inches long, has a cup-like head, similar to the termination of some of the gold penannular rings; there are four such specimens in the Collection. No. 489, Fig. 451, is a very rare form, $5\frac{1}{2}$ inches long; with a rivetted plate upon the shoulder, and a sunken oval disk on the front of the ring,



Fig. 449. No. 216.

Fig. 450. No. 498.

Fig. 451. No. 489.

Fig. 452. No. 190.

both evidently intended either for enamel or the settings of stones. No. 190, Fig. 452, is likewise a very rare specimen, and measures $5\frac{1}{4}$ inches in extreme length.

Figure 453, No. 126, on Tray **XX**, illustrates the decorated shank, central elevation, and cleft head, with recurved spires, like that seen in the pommels of some Danish swords, it is $10\frac{1}{2}$ inches long, and the portion here drawn is the natural

size. There are three other such sword-shaped pins in the Collection, Nos. 125, 131, and 188; but in the latter, the head scrolls are wider, and turned downwards and inwards. No. 422, on Tray ~~xx~~, Fig. 454, is a plain pin, with a wheel-like head, having a small hole in the neck, through which a ring passed. See Proceedings, vol. vii., No. 497, p. 130. The third illustration, Fig. 455, from No. 195,

represents, of the true size, the largest of a series of ten *Hammer-headed pins*, Nos. 192 to 201, on Tray ~~xx~~, that appear to be of a special and peculiarly Irish pattern. Each has a central aperture, with a pectinated

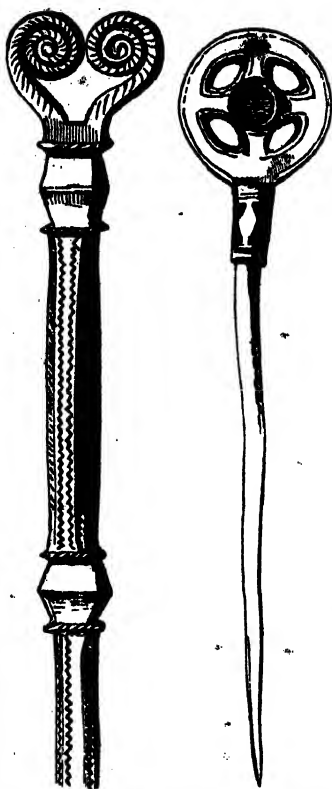


Fig. 453. No. 126.

Fig. 454. No. 422.



Fig. 455. No. 195.

set of jewel-holes, generally five, above the flat semicircular enamelled face. The elevated cast decoration within the margin is usually of the bird-pattern, and only rises to the level of the enamel, except in No. 197 where it

stands out in high relief. In No. 194, the enamel paste, now of a dirty white colour, is quite perfect; and portions of it remain on other specimens. In two examples the hammer-head is circular. In length they vary from No 192, a miniature specimen, 3½ long, to No. 200, which is 11½ inches. Walker

figured an article of this description in 1788 : see " Historical Essay on the Dress of the Irish," pl. ii., fig. 4.



* Among the many curious devices intended as dress-fasteners by the ancient Irish jewellers, that here figured the natural size, No. 495, on Tray ZZ, is one of the most remarkable. It was cast, and in colour of metal, and style of make, much resembles No. 190, figured on page 558 ; the boss with the cross, placed below the curve, represents the decorated face of the head. There are two other pins on Tray ZZ of a similar description, and about the same size and shape. But for their small pin-like ends, they would give the impression of having been used as ear-rings.

The *Ring-pins* and brooches are illustrated

by the fourteen following cuts. Figure 457, drawn the natural size, from No.

Fig. 456. No. 495.

420, on Tray ZZ, shows a

very rare form, with three rings passed through apertures in



Fig. 457, No. 420.

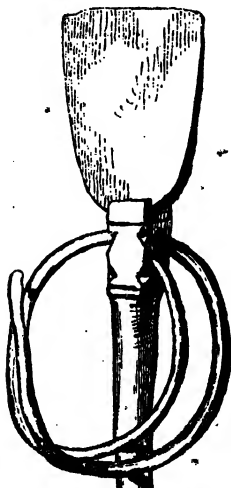


Fig. 458, No. 308.

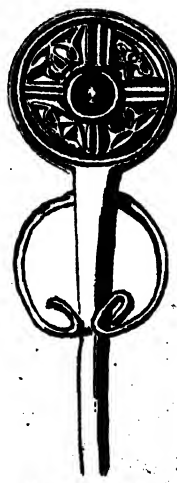


Fig. 459, No. 308.

the elongated head. It is 3 inches long, was found in the

Dunshaughlin crannoge, and—*Presented by Mrs. Rothwell.* There is no other article of this pattern in the Collection.

Figure 458 is drawn from No. 308, a long pin: with a flat head, like that of the ancient *stylus*, for smoothing the wax on the tablet; and, possibly, it and its fellow, No. 307, may have been used for that purpose. The ring which passes through the neck, consists of a piece of stout brass wire, tapering slightly from the centre to both extremities. The portion here represented is the natural size, but the extreme length of the article is $6\frac{1}{2}$ inches. In Figure 459, drawn the true size, from 305, on Tray **YY**, the head is circular, and highly decorated in the casting, and the ring very small and penannular. It measures $7\frac{3}{8}$ inches; there is an amber stud in the centre.

The four next cuts illustrate still further the development of the ring. In the first, Fig. 460, No. 235, is shown the type of a great number of small pins, in which the broad ring is barely sufficient to pass round the square decorated head, to which it is attached by means of a cross-rivet, which allows it to play like a swivel. Of this description of pin there are as

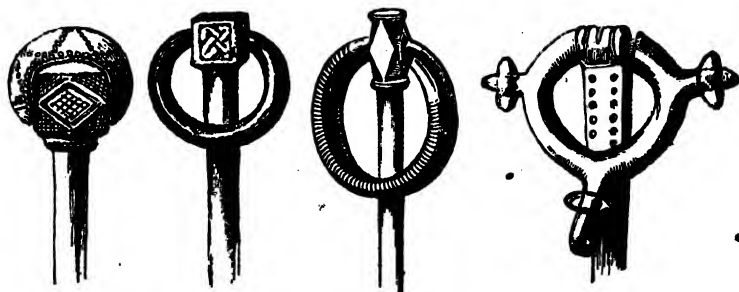


Fig. 460, No. 235.

Fig. 461, No. 263.

Fig. 462, No. 324.

Fig. 463, No. 297.

many as twenty-five specimens in the Collection, varying in length from $1\frac{1}{2}$ to 7 inches. In some of the smaller ones it requires a strong lens to ascertain that the ring and head have not been cast together. Figure 461, drawn from No. 263, on Tray **YY**, shows a simple ring-pin, in which the ring narrows where it passes through an aperture in the square de-

corated head. No. 324, Fig. 462, is $3\frac{1}{2}$ long, and its ring is double, except where it passes through the shaft. It was procured from Gweedore, and—*Presented by Lord George Hill*. Of this sub-variety there are sixteen specimens in the Collection. In No. 297, on Tray **YY**, represented the natural size by Fig. 463, the outer margin of the ring is decorated with quatrefoil ornaments, the lowest of which forms a loop, evidently for the attachment of a pendant; it has a long, flat, decorated acus, 6 inches in length. All the pins from No. 295 to 299 have pendant loops attached to the rings.

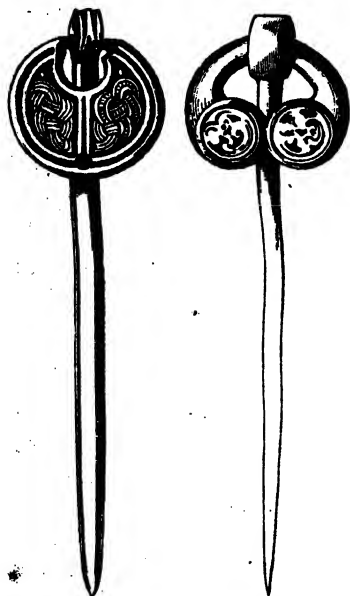


Fig. 464, No. 302.

Fig. 465, No. 296.

In the annexed illustrations, drawn the natural size, may be seen two varieties of rings not uncommon in collections of Irish brooches. The first, No. 302, Fig. 464, is one of a series of four articles of the same description, arranged on Tray **YY**, in which the ring assumes the form of a coin or flattened disk, with a notch at top to allow it free-play in the loop. In some specimens the disk of the coin-pin is quite smooth and plain; but in others, as in that here represented, it is highly ornate, and decorated with a funiform pattern. In No. 326, also on Tray **YY**, is

shown a rude plain specimen of the penannular pin, decorated in the inferior enlargements. This form of ring, as well as that in which the ends are united by a cross-bar, will be further illustrated in the descriptions of the silver ring-pins and brooches. Before proceeding to the description of the fully-developed ring-brooch, so far as that article is represented in bronze, we beg to direct attention to a series of seven stout

rings, about the size of thumb-rings, with projecting knobs on their external margins, which have been arranged on Tray **zz**, from Nos. 479 to 485, and of which the two annexed illustrations, drawn the true size, are typical representatives.



Fig. 466. No. 479.



Fig. 467. No. 484.

In Mr. Murray's collection, already referred to at p. 252, and some illustrations of which have also been presented to the Academy, there is a bronze pin, the ring of which is very similar to No. 479, figured above, so that the use of these articles is no longer a matter of conjecture. Their weight and shape may be one of the causes why so few have been found with the *acus* attached. There is an aperture in that portion of the ring, between the knobs, so that possibly a third decoration may have occupied that space. In No. 483, a portion of the ring is gilt, and the studs are decorated with central discs of red enamel. It resembles a finger-ring more than any of the others. For further details of these articles, see p. 589.

Ring-brooches—in which the *acus* merged into a mere fastener, and the designer's and caster's arts were chiefly expended on the ring—arrived at great perfection in bronze articles, although far inferior in size and workmanship to those composed of silver or *findruine*. The large bronze ring-brooches, about forty-eight in number, are chiefly arranged on Tray **yy**, from Nos. 331 to 371. See, also, those numbered from 463 to 470, on Tray **zz**. In breadth of ring they vary from $1\frac{1}{2}$ to $4\frac{1}{2}$ inches, the largest of which, No. 371, Fig. 468, is penannular, broad, flat, and almost plain below the narrow

hoop, which plays in the slightly decorated wide loop of the pin,

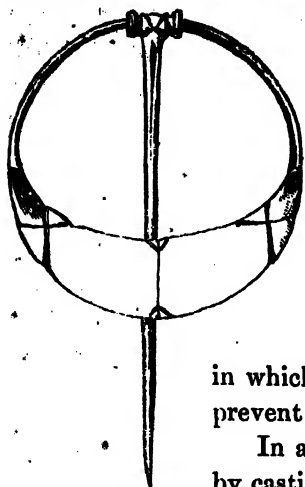


Fig. 468. No. 371.

which is $7\frac{1}{2}$ inches long; it is quite plain on the obverse, and is the only specimen of the kind in the Collection; it was—*Presented by the Shannon Commissioners.*

In a few instances, small brass wire helices, with sharp extremities, encircle the upper portion of the ring, evidently intended to secure that portion to the garment in which the brooch was fastened, and thus prevent its swinging about. See No. 470.

In addition to the decoration produced by casting, three other forms of ornamentation were employed in the construction of these brooches, viz.: by gilding, jewelling, and enamelling. An example of the first may be seen in No. 469; of the second, in several specimens, but in particular Nos. 343, 344, and 346, the first and last of which are figured on the opposite page. Examples of the third form may be seen in Nos. 339, 345, 347, 350, 352, 356, 359, 362, 368, 467, and 470; the colour of the enamel was generally white (now cream-coloured) or red, and in a few rare instances blue. In some cases the ring is separate below (penannular), to allow of the passage of the pin through it, so that when fixed the pin was oblique, and the ring hung perpendicular; but, as already stated, a cross-bar (often highly decorated) joined the large broad portions of the ring. See Nos. 361, 369, 469. In a few instances, the circle of the ring is occupied with a cross-stay, or sometimes three bars uniting in the centre, an example of which is shown in Fig. 469. In some rare cases, a decorated cross was attached to the lower margin of the ring, in addition to the decoration in its centre, of which there is a very good specimen in No. 466, on Tray

ZZ. The gilding is of two kinds, either by a wash, or a thin plate of gold pressed into the sunken ornament within the outer rim. The stones have been lost in many specimens, but their "settings" still remain; and, where present, they are all amber—that substance being most easily procured when these articles were manufactured. In some instances there were as many as eight amber studs in the front of the brooch. The enamel generally occupied an oval or triangular space on each of the lower enlargements of the ring; and where it is deficient, as in No. 359, 364, and 468, may be seen the roughened surfaces of the cavities on which it was laid.

The two following figures, unreduced, from Nos. 344 and 346, on Tray **XX**, illustrate the middle-sized bronze decorated and jewelled ring-brooches. In the former the pin is 4 inches

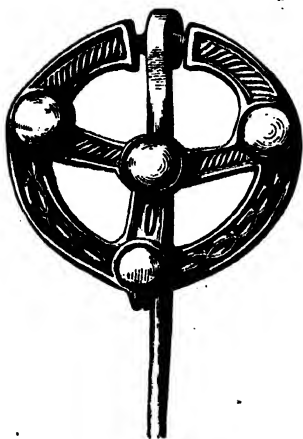


Fig. 469. No. 344.



Fig. 470. No. 346.

long, and in the latter 6½; in which it is also highly decorated, and raised above its usual level into the form of a human head, covered with the hood of the cochal, like that seen in the figure of the ancient steersman, given at page 321. In both the rings are jewelled. In Fig. 469 three bars occupy the centre of the ring; and in both, but especially Fig. 470, the character of the ornament is precisely that shown on the decorated bones figured and described at page 346, figures 229, 230, and 235. The outer margin of the ring in No. 346 is

also decorated. It was found in the Woodford river, near Ballyheady Bridge, townland of Corfreen, parish of Kildallen, county Cavan, and—*Presented by the Board of Works.*

In 1781, six circular brass plates, with curved stems, were dug up in Slane Park, county Meath, one of which (or properly two joined together) was figured by Vallancey, in his *Collectanea de Rebus Hibernicis*, vol. iv., p. 44, pl. vii., fig. 1, as a musical instrument, under the name of a Crotal, or cymbal: small wire helices encircled its stem. It is still in the Museum of Trinity College, and measures $12\frac{1}{2}$ inches long; but the centre piece is not part of the original, and one of the joinings, neither of which is shown in that engraving, is undoubtedly modern. See Dr. Ball's paper in the Proceedings, vol. iii., p. 136. Subsequent investigation has shown that these were not musical instruments, and are not capable of emitting any sound, except that of an ordinary piece of metal when struck by any hard substance. They appear to have been latchet-fasteners, the curved stem passing through oilet-holes in the garment, and may, from their shape, be styled *Spectacle-Brooches*.

There are four such articles in the Academy, arranged on Tray **xx**, Nos. 490 to 493, on one of which the helix for fastening it to the cloak still remains. Three are decorated upon the external surface, and vary in length from $3\frac{1}{4}$ to $5\frac{1}{4}$ inches, and from $1\frac{1}{8}$ to $2\frac{1}{4}$ in diameter of disk. The largest, here figured one-

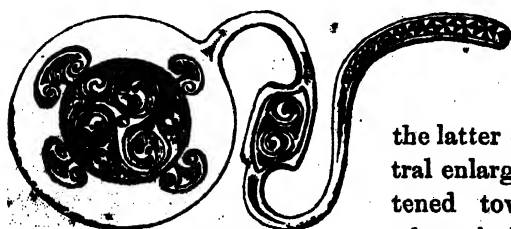


Fig. 471. No. 492.

half the true size, is highly decorated both on the disk and stem,

the latter of which has a central enlargement, and is flattened towards the point, where it is highly finished, thus proving, with others si-

imilarly formed, that such was its original termination. The cast decoration is of especial Irish character; that on the boss and

and central enlargement partaking of the cornuted device, and also the bird-like pattern seen in Fig. 455, p. 559, while that at the extremity of the stem resembles the bone ornaments figured at page 346.

Spring-Brooches.—All the foregoing articles may fairly be considered of native design and manufacture. Some of those, however, now about to be described, and which have been very rarely found in Ireland, present characters that resemble classic fibulæ more than any other articles of personal decoration in the Collection of the Academy. The four following cuts are drawn the true size from brooches, of which Fig. 472, No. 472, on Tray zz, presents more of the classic type than any of the others;

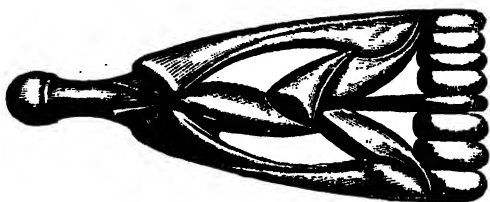


Fig. 472. No. 472.

but at the same time the ornamentation resembles the Celtic trumpet-pattern already alluded to at page 519. Its acus is fixed by a loop; but all the others of this variety have the pin, formed

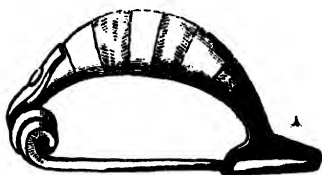


Fig. 473. No. 477.

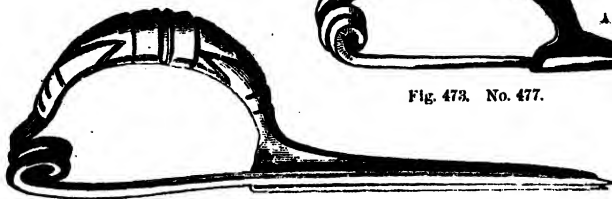


Fig. 474. No. 478.

by a spire of two or more coils, attached to one end of the article; and passing along the back, it is looped in a catch behind. Figures 473 and 474, drawn from Nos. 477 and 478,—deposited by the Royal Dublin Society,—may be styled spring-brooches of the *Dolphin pattern*, in each

of which the pin, having made two turns, by what is termed a "rat-trap spring," hitches into the curved fish-tail of the article. In the first, the spring has been riveted to the body of the brooch; but in the second, both brooch and pin are of one piece. The circumstances under which the three foregoing articles were discovered, are unknown. In Rhodius's rare old work, "*De Acia Dissertatio*," 1672, there are figures of several such fibulæ.

On Tray **ZZ** may be seen three fibulæ, resembling coiled snakes, and which may therefore be denominated spring-

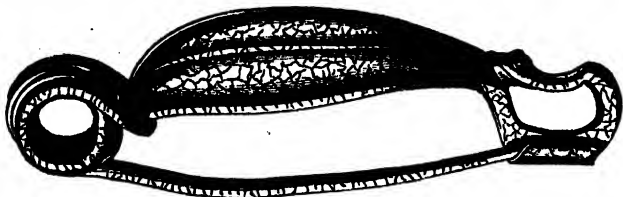


Fig. 475. No. 475.

brooches of the *Serpent pattern*, the largest of which, No. 475, is represented the size of the original by the accompanying illustration. In these, the body of the snake is flattened out—into that form which several of the cobra species assume when irritated, and standing partially erect—while the tail portion is coiled several times on itself, and fastens in a catch formed in the neck. This very beautiful specimen, which is in the highest state of preservation, and was *deposited by the Royal Dublin Society*, is curiously frosted with a raised irregular pattern all over the surface; but whether produced in casting, or caused by sudden cooling of the metal, is uncertain. No. 473, which is almost identical in shape, is said to have been found at Navan Rath, county Armagh, and was procured along with the Dawson Collection. Of all the bronze articles connected with personal decoration in the Academy's Collection, there are few can equal in design and workmanship the hinge-brooch, figured on the opposite page, the natural size, and which was found in the Ardakillen crannoge, near Strokes-

town, county Roscommon. The decoration on the enlarged ends partakes of the Celtic trumpet-pattern, a miniature facsimile of those curious bosses of thin sheet brass on Tray **vvv**, already referred to, and like them hammered or punched up from behind; while the central connecting curved strap, decorated with a raised intertwinement, like that seen on some of our sculptured crosses, and in the illumination of ancient manuscripts, would appear to have been cast. The exceedingly thin ornamented plate in front is fastened by eight rivets

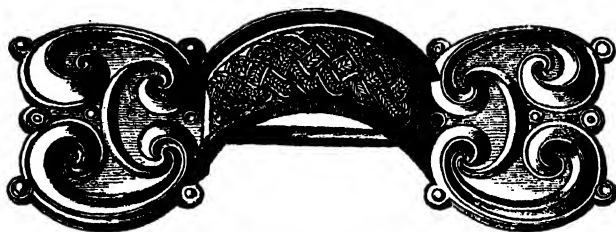


Fig. 47G. No. 476.

to a stout flat plate, behind, which also overlaps the edges of the strap. The flat pin is hinged behind.*

The total number of bronze pins and brooches now in the Museum, including those on "Find" Trays, is 600.

ARMILLÆ, BUCKLES, CLASPS, BUTTONS, CHAINS, BREAST ORNAMENTS, AND ARMOUR DECORATIONS, &c.—While the Scandinavian and German museums of fatherland antiquities abound in antique bronze diadems, collars, neck and arm rings, and also greaves, and leg decorations, &c., similar articles of that metal are very rare, some even unknown, in this country—such personal ornaments having been formed of gold and silver, but especially of the former, by the early Irish. To Tray **aaa**, in the Western Gallery, have been affixed a miscellaneous collection of such bronze articles of this nature as have come into the possession of the Academy, and from which the following illustrations have been made.

* The late J. M. Kemble considered this brooch of great antiquity, and the finest specimen of bronze workmanship in the Collection. He made a very careful drawing of it, a few days before his fatal illness.

The torque pattern was employed by our ancient jewellers in the construction of small bronze rings, and also of bracelets and armlets; there are four such specimens in the collection, of which that represented, one-half the true size, by Fig. 477, from No. 506, is a good example. It is composed of two torque rings, meeting in a decoration in front, with a central



Fig. 477. No. 504.

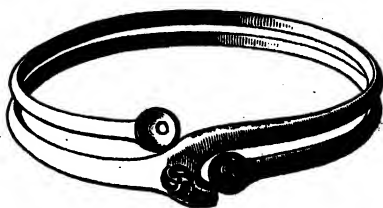


Fig. 478. No. 504.

aperture, and four elevated studs; it is the most massive article of the kind in the collection. Figure 478 illustrates (one-half the size of the original) No. 504, somewhat wider and more slender than the foregoing; composed of a double circle of thin bronze, with free ends, one of which is perforated for looping on a stud placed behind the central enlargement; the other extremity, as well as the central space, is decorated with an embossed bird-head pattern. It was found at the junction of the Deel and Boyne rivers, in the county Meath, and—*Presented by the Board of Works.*

Figure 479 drawn, one-half the true size, from No. 509;

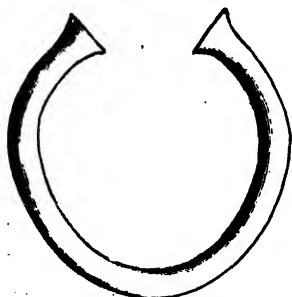


Fig. 479. No. 509.

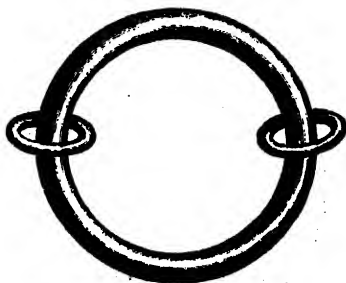


Fig. 480. No. 626.

is a penannular ring of pure red copper, and apparently of great antiquity; with slightly cupped enlargements at the

ends, like several of the gold armillæ found in Ireland. It is totally undecorated, and was—*Presented by A. W. Baker, Esq.* No. 511, on the same tray, is similar both in shape and material, but the copper is not so pure; it is also smaller, and not cupped at the extremities. Articles of this kind have been regarded by some persons as ring-money; but no reference to any such mode of barter has yet been discovered in the very ancient records of Ireland; whereas bangles, identical in form, are still worn, both on the wrists and ankles, by the inhabitants of other countries. Of this variety—which was probably worn on the ankle, like those still in use among the Hindoos and some African tribes—is Fig. 480, from No. 626, on Tray **FFF**, $4\frac{1}{4}$ inches in diameter, with two small rings attached to it, each $1\frac{1}{2}$ wide, which may have been used for suspending the anklet by. It was cast or hammered in two pieces, which are joined on the flat. [For finger-rings, see page 598.]

Besides the foregoing, the uses of which are unquestioned, there are a great number of large massive bronze rings in the Collection, two of which are placed on Tray **AAA**, and six on Tray **CCC**; these were probably worn on the limbs, several are solid; some of them may have been the handles of cauldrons, like those described at page 530; but a great many are hollow, and filled either with lead, or some composition, like that used in the construction of Danish sword-handles, already referred to at page 550. Several of these large rings have smaller ones attached to them, like Fig. 480, and some articles of the same description in gold.

The three following cuts represent other antique articles connected with personal decoration. Fig. 481 shows the true size, a curious and not inelegantly formed piece of bronze chain, No. 518; to one end of which a pendant is attached, but not of the same style of workmanship, and apparently of less antiquity. Fig. 482 represents, the true size, a highly decorated and enamelled button, No. 623, in Rail-case **F**. The enamel paste,—nearly deficient,—which was red and green,

filled up all the spaces not occupied by the raised bronze lines. The loop behind is very thin and small, so that it is probable this article was sown upon a garment more as a decoration than a fastener. Fig. 483 represents, the natural size, one of the most beautiful specimens of inlaying bronze with silver, and some dark metal (after the fashion of the ancient niello), which has as yet been discovered in Ireland. It is a pendant hook, No. 520,



Fig. 481. No. 518.



Fig. 482. No. 623.



Fig. 483. No. 520.

on Tray **AAA**, and may have been used for suspending a sword by. The scroll-work is of a purely Irish character. It was procured, many years ago, from Mr. Wakeman. There are a few other articles of this description in the Collection, in No. 521 of which the large decorated boss is covered with green enamel; but it is comparatively modern, and far inferior in style of workmanship to that here represented.

In the centre of the fifth row on Tray **AAA**, may be seen seven articles of different shapes, consisting of studs, plates, and bosses, highly decorated with the most elaborate patterns, each article differing in shape and ornamentation, but all originally covered on their external faces with a thick coating of gold. From the effects of time, and possibly some rude treatment, the gilding has been worn off the sharp raised edges of the pattern, but large quantities of it still remain

throughout the indentations of all; and, when examined with a powerful lens, it is manifest that the plating, or washing, with the precious metal, must have been of considerable thickness. Verdigris has exuded from the exposed red bronze in many places, and filled up the sunken portions of the decoration, but the patterns can be easily made out in all. In length they vary from $1\frac{1}{2}$ to 2 inches, and are about one-eighth inch thick at the outer margin. Posteriorly, they are flat and rough; and have two or more loops, according to their size, for attaching them to the garment on which they were placed,—possibly a buff-coat.

The casting is as fine as that seen in any of the brooches either of bronze or silver; and the style of ornament, although varied in each specimen, has a general resemblance to that on those decorated bones, already figured and described from pages 345 to 347. For a long time these articles were not considered of much value, and regarded as horse trappings,—the beauty of their decoration, and the circumstance of their gold plating, now established by analysis, not having attracted much attention. They were discovered, with several other articles, described hereafter, under the following circumstances, for an account of which the author is indebted to Mr. Wakeman, by whose zeal these valuable relics of the past were procured for the Academy. In July, 1848, the workmen engaged upon the railway, near the Navan station, adjoining the River Boyne, discovered a quantity of human remains, and also the skull of a horse, together with a number of antiquities, consisting of a bronze bridle-bit, and harness plate: some links of a chain and a massive boss evidently for the attachment of a chariot trace; iron rings plated with bronze, some small bronze buttons, and the seven richly gilt articles here referred to; all of which are now in the Museum of the Academy, and four of which have been engraved. In the place where these remains were discovered, the soil was much darker than the adjacent ground. The human bodies do not appear

to have been placed in any order; and in the surrounding earth was found a great quantity of charcoal, extending from 2 to 10 feet below the surface. A small portion only of the grave, or battle-pit (if such it were), was traversed by the railway cutting, so that much of the ground of this very remarkable interment remains as yet unexplored.

By the three following unreduced illustrations are presented typical specimens of the decorations alluded to, the details of all which are given at page 592. Three of the seven articles are more or less cruciform in shape, and have small loops behind for attaching them to the dress; only two are duplicates; and, with these exceptions, all the others, although in pairs, are totally distinct in ornamentation. No. 562, Fig. 484, cast from the same mould as No. 560, has been cleaned by a jeweller, in order to disclose the true nature of the metal, and the extent of the gilding. It is almost as red as pure copper, and the greater part of the fine yellow gold wash or plating remains on the central boss. It has four loops on the reverse side for attaching it to the buff-coat, or other garment, to which it must have formed a very beautiful

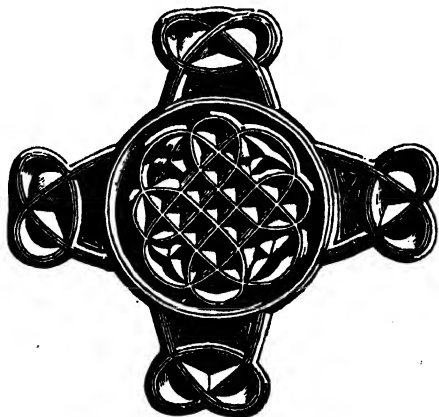


Fig. 484. No. 562.

decoration. No. 559, Fig. 485, which remains in the state in which it was found—is, like the majority of these plates, slightly curved, as if to adapt it to the rotundity of the person, and has a different style of ornament in the head from that shown in Fig. 484. It has three loops posteriorly. Its fellow, No. 563, had originally a stone in the central boss, the setting only of which remains; it resembles this in shape, but

differs in the ornate details. Fig. 486 is drawn from No. 561, and would appear to have been the central decoration. Its stile of ornament differs from both the foregoing in the circular pattern which pervades it, and which resembles the trumpet-

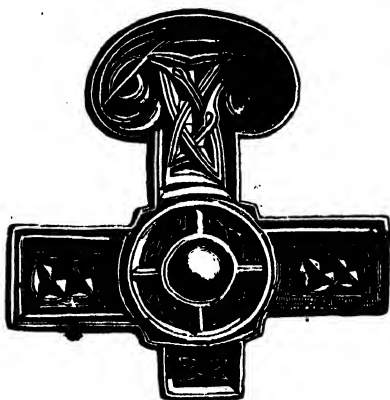


Fig. 485. No. 559.



Fig. 486. No. 561.

shaped figure already referred to at pages 519 and 566. It has four loops posteriorly. It is to be regretted that the limits of this work do not admit of having all these plates engraved. It may be asserted that they were horse-trappings or harness decorations; but the brooch-like and highly cast ornament, and the gilding, &c., have led us, in lack of any positive evidence, to a contrary opinion.

The ancient Irish warrior, standing behind the *Ara*, in his two-horse chariot; armed with a heavy battle-axe and long glittering spear; provided with several darts, or lances, for casting at the foe; and having by his side a leaf-shaped, brilliant, gold-adorned sword,—was, in all probability, furnished with more defensive armour than a small, round, brazen-centred shield: but no remnant of either helmet, greave, or leg-plate, has yet been recovered, wherewith the antiquary could present such a chieftain to the modern historian, arrayed in the panoply of the day in which he lived. That coats of mail were in general use here is evident from their frequent mention in

our early histories; but they were probably of iron, and will be taken into consideration in the description of articles of that material. There is, however, in the Royal Irish Academy a very extensive collection of bronze rings of different sizes, which, although believed, some years ago, to have been used as means of barter, and described as "ring money," there can now be little doubt formed portions of costume. Upon Tray **BBB**, in the second compartment on the north side of the ground-floor, is displayed the remains of a suit of bronze ring-mail, which probably served, when worn over or attached to a buff-coat, the double purpose of defence and decorative costume; and was, in all likelihood, a portion of the paraphernalia of office in days gone by. It was discovered, about twenty years ago, three feet under the surface, in burning a reclaimed bog, adjoining the old castle of the O'Conors, near the town of Roscommon. "Owing to the peaty nature of the soil," observes Dr. Heily, through whose means this valuable relic was preserved, "the fire burned down into a pit, from which this armour was thrown up. I had the place most carefully searched, but no trace of human or other bones could be found." This figure represents the article as it was found (and as it is now placed on the tray), consisting of two broad chains, each composed of five strands of rings, with five links in each, except the upper and inner strands, which have but four links,—joined at their centres to curved shoulder-plates, and united in front and rear to large, hollow, ornamented, wheel-shaped bosses, from which proceed portions of other chains, the terminations of which are



Fig. 487, No. 1.

as yet unknown. These chains are chiefly made up of triple rings, cast in single pieces; and are united to each other, and to the shoulder-plates and bosses, by narrow looped slips of bronze. The two inside strands, both above and below, have each a link of only two rings, evidently for the purpose of shortening the chain towards the neck. As placed on the tray, and represented in the drawing, it measures $15\frac{3}{4}$ inches in the clear between the bosses, each of which is 4 in diameter, and provided with seven loops above and below for the attachment of the two sets of chains, as shown in the annexed illustration, drawn one-third the true size. From the lower edge of each boss depend seven fragments of chain, the longest of which is 9 inches. They are chiefly composed of triple links, but contain some specimens of four rings joined together.

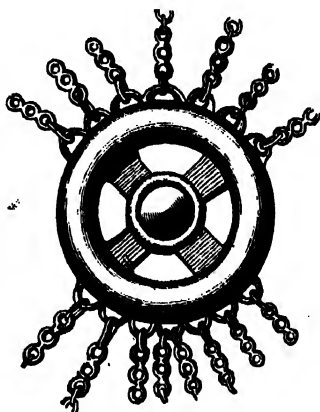


Fig. 488, No. 1.



Fig. 489, No. 1.

The following figure illustrates a link of the chain, which is about $1\frac{1}{2}$ inch long, and $\frac{1}{2}$ wide. The shoulder-plates, each $4\frac{3}{4}$ inches long, and $3\frac{1}{4}$ broad, are cast in single pieces, and decorated on the external surface as well as perforated in the same style of art as that displayed in the chain.

With these articles—which were found united—were discovered a number of detached pieces, which, no doubt, formed portions of the same, or a similar personal decoration, consisting of fragments of chain of a larger size than that figured above; and bosses of various shapes, some of the most characteristic specimens of which are represented on page 578, which, with others found elsewhere, are placed in the same tray as No. 1. Some of these chains were cast with five links to-

gether (see No. 20) and many of the larger ones with but two, as shown in the accompanying figure, from No. 15, each ring of which is thin, flat, and $1\frac{1}{4}$ inch wide.

The remaining rings and bosses are of three kinds—large hollow rings, encircled with loops on their external margins, and small trumpet-mouths, also having central inserted bosses, through which circular bronze rods pass for connecting them with other rings, and which also served to fix them in their places. There are two such articles on Tray **BBB**, Nos. 2 and 3,

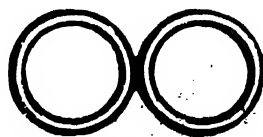


Fig. 490, No. 15.

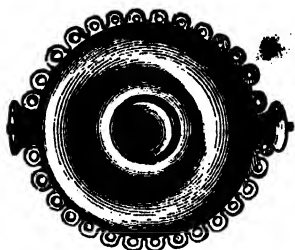


Fig. 491, No. 3.

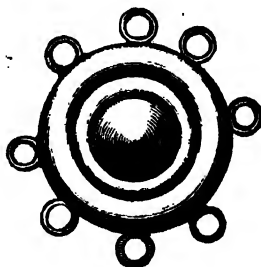


Fig. 492, No. 4.

both slightly defective; and from the latter of which, Fig. 492 has been drawn, one-third the size of the original. No. 4, also reduced two-thirds, and represented by Fig. 493, is of a different pattern from any of the foregoing, and composed of a hollow ring, surrounded by a number of circular chain loops, and the centre filled by a moveable boss, with a conical projection, traversed by a pin, which fixes it within the external ring.* By Figure 493 is shown, one-half the true size, a centre-piece, similar to that in the foregoing, found in the Co. Tipperary. On one edge may be seen the aperture through

* This is the identical article, formerly in Dean Dawson's collection, which Sir William Betham figured in the Transactions of the Academy, vol. xvii., and described as "a Celtic Astronomical instrument, invented to exhibit to the pupil a diagram of the Earth's polar inclination, and the phenomena of the phases of the Moon"!!

which the traversing pin passed. The third article of this variety, and that most frequently discovered, is a ring, generally hollow, mostly approaching an oval, and having a trumpet-mouthed aperture on each side, more or less wide, elevated and decorated in the different specimens, which vary in size from $1\frac{1}{2}$ to $3\frac{1}{2}$ inches in their greatest length. No. 93, Fig. 494, is a characteristic specimen of this article. They were traversed by double-looped straps of bronze, which connected them on each side with ring chains, which remain *in situ* in several specimens: see Nos. 7 and 8. There are altogether twenty-three rings of this description in the Collection, viz: Nos. 555 and 556, on Tray **AAA**; Nos. 6 to 11 on Tray **BBB**; and Nos. 80 to 94 on Tray **CCC**. Vallancey, who figured one of these in 1784, under the name of *Iogh Draoach*, or “Druids’ chains of knowledge; or chains of Divination,” says, “they are found in our bogs in great plenty.”



Fig. 493, No. 6.



Fig. 494, No. 93.

On Trays **CCC** to **FFF** have been arranged a collection of five hundred and seventy-eight bronze rings, mostly single, but some double, and a few interlooped, and varying in size from that of an ordinary finger-ring to specimens $4\frac{1}{2}$ inches in diameter. On the upper portion of Tray **CCC** have been arranged twenty-five rings, varying in diameter from somewhat less than an inch to about 4 inches; the smaller are solid, but the larger hollow, perfectly plain, and perforated on each side for the passage of a loop for connecting them to chains or other bosses. They have no lips or trumpet margins to their lateral apertures; but from a careful examination of the chain dress on Tray **BBB**, no doubt can longer exist as to their use. Some of these measure $1\frac{3}{4}$ of an inch in the thickness of ring.

Detached rings, bosses, and portions of ring-chain, identi-

cal with those just described, having been frequently found in Ireland, attracted the attention of the speculative and fanciful antiquaries of the last century; and like other articles, the direct uses or object of which is either undetermined or misunderstood, have been usually attributed to Druidism, and had mystical meanings assigned to them, on which the most absurd theories were founded; and on the names assigned to them by theorists, discursive philological dissertations were written. Thus, Vallancey figured five of these links of chain-armour in his *Collectanea* (vol. iv., pl. xiv., pp. 73 to 106), and described them as amulets, divining-rings, talismans, ring-money, and Teraphims, &c., under the names of *Fainidh-Draoieach*, *Tair-Faimh*, *Boil-Reann*, *Soilfeach*, *Iogh Eolas*, and *Ainic Druieach*, &c. &c.

The chain-loop to some of these rings, he says, "represented the Sun, Moon, and Earth, and the large ring in the centre was the Earth." Other persons, he states, thought "that they represent the Sun, Venus, and Mercury;" but, he adds, "all agree that some of the planets were understood to be thus represented."* The author of the foregoing was, like other speculators, not quite clear as to the Jewish, Phœnician, or Chaldaic origin of these articles; but he was certain that "the Irish Druids never walked abroad without the ring and staff"—page 83:—although we really know nothing of Irish Druidism, except the bare fact of Patrick and the early Christian missionaries having come in contact with its priests on their arrival, in the fifth century. The ecclesiastical chroniclers of the period, in their zeal for the establishment of Christianity, would appear to have altogether ignored the subject of Pagan worship: and of the Druidism of Gaul and Britain we know little beyond what may be gleaned from the writings of Cæsar.

* See *Collectanea*, vol. iv., p. 84. Sir W. Betham evidently took his notion of the astronomical instrument, alluded to in the note at page 578, from the foregoing fancy of Vallancey.

With one of the gold penannular ornaments recently acquired by the Academy, from the county Sligo, was discovered a quantity of small ring-chains of a peculiar make: see No. 647, page 599. For Finger-rings, see Rail-case P, page 598. The only other articles of note, appertaining to dress or personal decoration, in the Collection, is a series of large buckles, on Tray GGG; but they are of very modern date.

The following is a detailed catalogue of all the bronze or brass articles belonging to dress or personal decoration in the Collection:—

BRONZE, II.—WESTERN GALLERY, CENTRAL COMPARTMENT.

SHELF I., Tray ~~XX~~, contains two hundred and forty-four bronze pins, cloak and hair fasteners, of various shapes and sizes; numbered from 1 to 244. They are arranged in four rows, not merely for the purpose of artistic display, but with a certain regard to the forms of each sub-variety. The first row contains 83 simple pins, varying in length from 2 to 5 inches. Their shanks are generally circular, and in most instances smooth and plain; but in Nos. 16, 17, 18, 35, 77, and 83, they are slightly decorated, either by transverse, oblique, spiral, or chequered depressions or elevations. In most specimens the heads are globular, and perfectly plain; but in those numbered from 38 to 83 they are flattened, and either circular or triangular, with graven or cast decorations on the flat surface. In Nos. 68, 69, 70, and 75, they are cubical, with the angles removed. It is manifest that the heads were attached in Nos. 21 and 22. Nos. 45, 62, 63, 66, and 69, have been figured as illustrative of the form of head in simple pins, on p. 556. Nos. 1 and 69, were found in the crannoges of Clonfree and Ardakillen, county Roscommon; and No. 14 in the island in Roughan Lake (see page 223).

In the second row the pin-heads are more developed and decorated, and in the central specimens the shanks are of great length; they were probably hair-pins. This row contains eighty-three specimens, numbered from 84 to 166, which vary in length from $1\frac{1}{2}$ to $13\frac{1}{2}$ inches. The first forty are of the same variety as those in the

top row, but exhibit greater diversity in ornamentation of both head and shank. No. 79 was found at Ardakillen. No. 124, figured with 113 and 114, at p. 556, presents the first instance of a division between the decorated upper portion of the shank and its plain extremity, and of which Nos. 126, 131, 133, 135, and 136, are good examples. In these, a portion (about the upper-third) is enlarged and decorated, either in casting or with the file or chisel. Nos. 125 and 126 have remarkable sword-pommel-shaped heads, the latter is figured and described at p. 559; and in No. 131 the scroll is turned downwards and outwards. The three central pins, Nos. 127, 128, and 129, are the longest specimens in the Collection, and have circular disks at top; the two last are decorated; the first and second are figured and described at p. 557. No. 132 is a unique specimen, cupped at top, probably for holding a jewel, and has a loop attached to the stem. No. 136 has a remarkable open-work head and a central square elevation on the stem; it was found at Clonmacnoise. The heads of all the remaining pins in this row decrease in size to the end, and have been decorated by the file. No. 137 has a hollow on top of solid head. In No. 138 there are projections on the top and sides of the head. No. 139 was found, with several others, in a quarry near Donnybrook. Nos. 140 and 143 were found at Headford, county of Galway. No. 148 was found at Ardakillen crannoge.

The third row contains forty specimens, numbered from 167 to 206, which show still more the development of the head than any of the foregoing. No. 170 is figured at p. 555. No. 174 was found at Ardakillen, and 177 at Roughan Island. Nos. 183 to 187 have curved heads, formed into zoological designs, of which No. 184, figured on p. 555, is a typical specimen. No. 188 has a large recurved head, like No. 181, and a square elevation on the shank. In No. 189 this peculiar form is still further developed. The ten specimens numbered from 192 to 201 present a peculiarly Irish form of fibula decoration, the type of which, from No. 195, is figured and described at p. 559. No. 192 was procured from Gweedore. In Nos. 200 and 201, the tops of these hammer-headed pins are circular. In No. 194 the white enamel still remains. In No. 197 the bronze decoration on the flat of the head is raised above the level of the enamelled surface. Nos. 200 and 201 have small circular heads, like some of the

silver pins. No. 203, a good specimen, in fine preservation, with a lozenge-shaped head; is $4\frac{3}{4}$ long. It was found at New Grange. The last three specimens on this row commence another description of decorated head, of which there are fifteen examples in the Collection, ending with No. 218 in the bottom row, and of which 207 and 216, figured and described on pp. 557 and 558 are typical examples. In these the shield-like boss is attached to the bent portion of the pin, and has a large conical projection in the middle; in length of stem they vary from $2\frac{1}{2}$ to $8\frac{1}{2}$, and in diameter of boss from $\frac{3}{4}$ to about $2\frac{1}{4}$; the central projection rises from $\frac{1}{2}$ to about an inch above the surface. The external surfaces of these bosses are, in most instances, highly decorated; see, especially, No. 206, where it is formed by a series of minute concentric circles; that pin was found at Croghtenclogh, parish of Castlecomer, county Kilkenny.

In the bottom row, consisting of thirty-eight specimens, numbered from 207 to 244, the first twelve belong to the variety just described. No. 214 has been cleaned, to show the reddish copper colour of the metal before it was tarnished by time. All the remaining pins on this tray, except No. 219, present the same form of semi-circular head, which in No. 228, and all after, becomes a loop. No. 215 was found at Loughran's Island, on the Lower Bann. No. 216 was procured from Keelogue Ford. Nos. 223 and 244 were found in Ardakillen, and No. 235 in Cloonfinlough crannoges. No. 237 was procured from Lough Gurr, county Limerick.

Of the foregoing, No 1 was—*Presented by the Rev. Peter Browne*; Nos. 20, 124, 136, 156, to 160; 209 and 216—*by the Shannon Commissioners*; Nos. 69, 79, 148, 173, 233, 235, and 244—*by the Board of Works*; No. 88—*by Executors of Leslie Ogilby, Esq.*; No. 203—*by R. Maguire, Esq.*; No. 130—*by R. A. Grey, C. E.*; Nos. 140 and 143—*by R. J. M. St. George, Esq.*; Nos. 131, 133, 213, and 236, were procured with the Dawson Collection.

SHELF II., Tray **XX**, contains one hundred and twenty-seven pins and brooches, all supplied with rings, and showing the process of development in that portion of the article; most of them are highly decorated, and numbered from 245 to 371. The top row contains forty-three pins, varying in length from $2\frac{3}{4}$ to 10 inches, and in diameter of ring from $\frac{1}{2}$ to $1\frac{1}{2}$ of an inch. Most of the stems are circular and plain; but in Nos. 255, 256, 259, 260, 264, 266, 269, 270,

271, 272, 277, 279, 280, and 284, they are flattened towards the points, and also decorated,—some of them with the most minute and elegant ornamentation, apparently produced in the casting. At the commencement of the row the heads are large, and decorated,—up to the long central pin, No. 268; after which, that part decreases in size until it becomes a mere loop, or turn-over, for retaining the enlarged ring. In the first specimens, the ring narrows in substance where it passes through the pin, so as to form a swivel; but in others, towards the end of the row, as in Nos. 277 and 285, it passes through without any diminution in size. With the exception of the first, all the other rings are plain. Nos. 268 and 278 were found in Cloonfinlough crannoge, described at p. 226. No. 286, originally plated, was found in a bog, close to an ancient ford, near Anadruse bridge on the River Deel, townland of Derrymore, parish of Killucan, barony of Farbill, and county Westmeath.

The second row contains forty-three specimens, in which the rings are more developed than in the foregoing. The first six resemble those in the top row, with the exception of No. 293, which has a large burr on the side of the ring-hole. In all the other specimens the ring is either double, split, or more or less decorated. In No. 294 may be seen the rudiments of those enlargements subsequently observed upon the penannular brooches. In No. 295 to 299 there is a loop at the end of the lower margin of the ring, probably for attaching a pendant to. No. 297 has been figured and described at p. 561, to illustrate this variety. It has a long flat acus; the outer margin of the ring is decorated with quatrefoil knobs. In Nos. 295, 296, and 300, may be seen the settings for decorative stones, possibly amber. In No. 298, the pendant loop is in the form of a bird's head. In the four following specimens, Nos. 301 to 304, the ring assumes the form of a flattened disk, like a coin, of which No. 302, figured and described at p. 562, is a typical example. In the four next specimens, from Nos. 305 to 308, the heads are specially developed, and the rings become again the minor part; a good exemplification of which may be seen in No. 305, figured at p. 560. It and the following have large circular heads, with small wire-like loops passed through the necks. Nos. 307 and 308, the latter of which is figured and described at p. 560, resemble in the form of their flat heads the ancient *stylus*, the upper portion of

which was used for smoothing the wax on the tablet, before writing with the point. They have each large twisted rings passed through holes in the neck. The remaining numbers on this row vary in length from $2\frac{1}{8}$ to $6\frac{3}{4}$ inches. Sixteen have either double or split rings—like key-rings—passed through the aperture. The six last are small pins, with highly decorated penannular rings. No. 296 was found at Ballinderry; and No. 306, in the old channel of the River Brusna, opposite the ruins of Gallen Abbey, King's County. No. 317 was found in the bed of the Yellow River, near Ballyduff Bridge, parish of Oughteragh, county Leitrim. No. 321, in Gillstown River, townland of Clooneen-Hartland, barony of Ballintubber North, county Roscommon. No. 324 was procured from Gweedore; and No. 330, from Oldcastle, near Mullingar.

The third row contains twenty-six ring-pins, exhibiting a still greater advance in the process of development of the ring, which in most instances is flattened out, and in some jewelled. They are generally plain in the shank, with simple looped heads; but in a few instances, as Nos. 346, 349, and 355, &c., the loop, or ring, is decorated. In length they vary from $2\frac{3}{4}$ to $6\frac{1}{2}$ inches. The majority are penannular, and vary in diameter from $1\frac{1}{8}$ to 2 inches. Without entering into most minute and voluminous details, or affording a very large number of illustrations, it would not be possible to present the reader with a full description of the character of ornamentation observable on these rings, no two of which are alike. In No. 337, the ring, although apparently cleft, is joined below, a form not uncommon in many of the larger brooches of silver and white metal. In this, and, with few exceptions, all the other specimens on the third row, the lower margin of the ring is enlarged, flattened, and decorated; and in No. 339 was also jewelled. In several specimens, viz. Nos. 338, 339, 340, 342, 343, 344, and 346, the ring is flat, decorated all round the hoop, and passes through the loop in the pin-head by a slender portion, with a raised shoulder on each side. No. 343 has a very perfect and highly decorated ring, ornamented in the style of the bone carvings exhibited by Figs. 229 to 231, on p. 346; the three amber studs still remain; it is one of the most perfect articles in the Collection. No. 344, figured and described at p. 565, has three of the four original amber studs remaining. No. 346 has the acus highly developed at top, and is also figured and

described at p. 565. In Nos. 347, 349, 350, 353, and 356, the upper portion of the circular ring is decorated with a number of transverse and spiral indentations. In No. 350, a portion of the enamel still remains on the face; as also in No. 352, where it is of a white and red colour. See Proceedings, vol. vi., p. 250. No. 334 was found at Loughran's Island, on the Bann; No. 336, in the bed of the Shannon, at Athlone; and 343 at Dunshaughlin.

The fourth row consists of fifteen brooches, in which the ring reaches the maximum of size observed in bronze articles of this description; while the pins are proportionably shortened, and with few exceptions are all decorated on the loops, which are flattened out, some to the extent of $\frac{3}{4}$ of an inch. In length they vary from $3\frac{1}{2}$ to $7\frac{3}{4}$. In No. 361, a ring-brooch, with a connecting bar between the ends of the penannular ring, we first observe that large triangular development of the head of the acus on which the jeweller subsequently displayed much taste and ingenuity, as may be seen in the large brooches of silver and white metal. Most of these developed heads are brazed so accurately to the posterior loops, that the joinings are imperceptible. The rings vary in diameter from $2\frac{1}{2}$ to $4\frac{1}{2}$ inches; and, with the exception of Nos. 357 and 361, they are all penannular. No. 359 has the large extremities of the ring hollowed out for enamel, showing the roughened beds on which that substance was placed. No. 364 presents the same peculiarity. Most of these rings are circular above the lower development, and decorated with transverse lines, like those in the previous row. Some of them are plain upon the reverse; but others are decorated, either in casting, or by engraved or punched lines; and Nos. 364 and 368 have deep hollows on the obverse, opposite the lower enlarged and decorated portions. In No. 369, in which the pin is wanting, the ring is joined below by a cross-bar, and has six jewel-settings. The last article on this row, No. 371, figured and described at p. 564, is the largest bronze brooch in the Collection. No. 357, much corroded, was found a short way under the surface on the Antrim bank of the Portna rapids, on the Lower Bann. Nos. 365 and 366 were found one foot under the surface of the land, in the townland of Droughtville, barony of Ballybritt, King's County; and 370, in the Shannon, at Cornacarrow, county Leitrim.

Of the foregoing, Nos. 251, 293, and 318, were—*Presented by*

Lord Farnham ; 254 and 301—by *R. A. Gray, C. E.* ; 268—by *A. Lawder, Esq.* ; 323—by *Dr. O'Meara* ; 352—by *Rev. C. Graves, D. D.* ; Nos. 209, 216, 244, 266, 292, 327, 336, 361, 363, 370, and 371, were—*Presented by the Shannon Commissioners* ; and 306, 317, 321, 334, 346, 357, 365, and 366—by *the Board of Works*. Nos. 307, 308, 335, 354, and 360, were procured with the Dawson Collection.

Tray **ZZ** contains one hundred and twenty-eight bronze pins, brooches, latchet-fasteners, and other articles of that description, numbered from 372 to 499. The top row contains 43 simple pins, varying in length from $2\frac{1}{2}$ to $6\frac{3}{4}$ inches. Several of them are very slender; see, in particular, 379 and 396, which are not grosser than a large modern pin. The shanks of many are decorated with most elegant patterns, of which No. 399, figured on p. 555, is a good illustration; see also No. 400, which possesses the same style of scroll work. In No. 408 the shaft is plated, and in No. 383 it is inlaid with silver; but the decoration is so minute in several as to require a lens for the discovery of its beauty. In No. 401, which is 5 inches long, and slightly decorated all over the shank, there is an eye near the point like that of a packing-needle; it is the only specimen of the kind in the Collection. In several, the lower third of the shaft is four-sided; see Nos. 382, 384, 385, and from 391 to 394. The heads are chiefly circular, and carved like the rimer used for counter-sinking screw-holes. The first, No. 372, has a large nugget-head, and is evidently unfinished. A few towards the end of the row are looped for the passage of rings.

The second row contains thirty-four pins, most of which are supplied with rings; this series shows the first advance in that form of decoration. In length they vary from $2\frac{1}{2}$ to $5\frac{1}{2}$ inches, and are numbered from 415 to 448. The four first are plain, with decorated heads. No. 419 is a most remarkable pin, $5\frac{1}{2}$ inches long, with a double ring passed through a square decorated collar, from which spring upwards several loops that support a cup-like head, which possibly held a stone, and which is detached from the shaft; on these loops, as well as on the necks, are strung several small rings. No. 420, a small pin with three rings, figured and described at p. 560. No. 421, a very elegant pin, in fine preservation, with wreath-shaped loop. No. 422, said to be from Ballinderry, is figured and described at p. 559. No. 423, ditto, imperfect in point,

circular head, enamelled. No. 424, plain, with large buckle-like quadrangular loop. No. 425, ditto, with flat circular loop. No. 426 has a horse-shoe-shaped ring rivetted across the square top. In No. 427, with two stone settings the ring is enlarged below; a cross-piece joins the ends. No. 428, ring penannular. No. 429, ring, decorated. No. 430, a flat highly decorated ring. No. 431, ditto, with six stone settings. No. 432 has one stone-setting. No. 433, a small plain pin, with large flat circular disk, like a coin, suspended from it. No. 434, ditto, smaller. No. 435, ditto, still smaller. No. 436, a rude plain flat pin of bright yellow metal, with hole in top; no ring or loop. No. 437, a small plain pin, with quadrangular buckle-like ring. No. 438, a long pin, with small broad ring. The remaining articles in this row show the development of the simple ring which in Nos. 489, 440, and 442, is attached to the stem by a cross rivet.

The third row contains eighteen articles, chiefly brooch rings, but with four exceptions having no pins. No. 449, a plain ring. No. 450, ditto, penannular. No. 451, portion of double ring. No. 452, a double ring of two and a half coils. No. 453, ditto, larger. Nos. 454 to 457 are four small brooches, like some of those in the collection of silver articles, in which the pin does not project beyond the margin of the ring. In diameter they vary from $\frac{3}{4}$ to $1\frac{1}{4}$ inch, and are all decorated; the ornament on 456 resembles that in some Scandinavian gold articles, and consists of a number of indentations sunk into the substance of the metal. No. 458 is a large flat ring, with a small narrow neck for passing through the loop of the pin, at which point the ends overlap for about $\frac{1}{4}$ inch. It is $1\frac{3}{4}$ in diameter, and decorated with Ogham-like marks. No. 459, a small, plain, penannular ring. No. 460, a ring decorated below. No. 461, ditto, with cross bar. No. 462, penannular, decorated. No. 463, highly decorated on lower flat expansions. No. 464, ditto, decorated, twisted. No. 465, a ring with cross-bar, decorated. No. 466, a very remarkable ring; the loop for fastening it to the acus is placed behind, like that seen in some of the pins in large decorated silver brooches. The ring is rendered wheel-shape by a central cross, and has a pendant cross below its external margin. It has nine countersunk elevations, probably stone settings: see p. 564.

The fourth row contains four perfect brooches, numbered from 467 to 470. No. 467, a penannular ring brooch, with four red

enamel studs. No. 468, ditto, with large shallow enamel indentations in lower margin of ring; highly decorated head-loop to pin; $4\frac{3}{4}$ long, and $2\frac{1}{4}$ wide in ring. No. 469, a very beautiful and highly decorated bronze brooch gilt, loop attached to posterior side of decorated head, cross-bar to ring; $4\frac{3}{4}$ by $2\frac{3}{4}$. No. 470, a penannular ring-brooch, with large decorated looped head to pin, like 468. Portions of red and yellow enamel paste still remain in ring. Two helices, or wire-spires, for attaching it to the dress, are still *in situ*.

The fifth row consists of spring brooches, and the knobby rings of pins, like those figured at p. 563. No. 471, a spring brooch, wanting the pin, of classic, and what has been styled Helvetian form. No. 472, a triangular brooch, with trumpet ornament; figured and described at p. 567. No. 473, a spring-brooch of classic form, representing a serpent, with enlarged neck, forming the body of the article, while the tail coiled round several times, ends in the pin, which catches in a fastener formed below the head; $2\frac{1}{2}$. No. 474, ditto, longer and broader, with five-coiled spring; head of serpent very well cast; decorated down the centre, and along the outer edge; $3\frac{1}{8}$. No. 475, the very beautiful specimen of the same variety, figured and described at p. 567. No. 476, the buckle-brooch, with trumpet pattern; figured and described at p. 569. The two next specimens, Nos. 477 and 478, are of a different variety, and both figured and described at p. 568. The remaining articles on this row consist of rings about the size of thumb-rings, with two or more knobs attached to the outer rims of each; and believed to have been attached to pins. The first, No. 479, is figured and described at p. 563. No. 480, ditto, with three knobs; central one defective. No. 481, ditto, three knobs in a cluster. No. 482, ditto. No. 483 like a finger-ring; lower portion gilt, with central red enamelled studs in each of the three knobs. No. 484 is figured at p. 563. No. 485, ditto, unsymmetrical.

The last row consists of a series of pins, and other articles connected with personal decoration. No. 486, the acus of a ring-brooch, with triangular gilt head; $2\frac{1}{4}$. No. 487, a remarkably long, slender pin; of unusual pattern; $7\frac{1}{4}$; with a thin flat rim of white metal, two jewel-settings; $1\frac{1}{2}$. No. 488, the long acus of a large ring-brooch, with decorated head, and wide loop posteriorly; 7. No. 489 is figured and described at p. 558. The four next specimens

are spectacle-brooches. No. 490, figured below, measures $4\frac{1}{2}$ in its greatest length; and has a small circular termination to decorated stem; disk plain; $1\frac{1}{2}$. No. 491, ditto; $4\frac{1}{2}$; disk slightly decorated in centre, as if struck with a die; $1\frac{1}{2}$ in diameter. No. 492, ditto, highly decorated; figured and described at p. 566. No. 493, a small plain specimen of spectacle-brooch; $3\frac{1}{4}$;



Fig. 495. No. 490.

Fig. 496. No. 493.

disk, $1\frac{1}{2}$, with a helix of six coils encircling the slender, sharp-pointed stem, as shown above. The three next specimens are curved pins, of a peculiar shape; of which, No. 495 is figured at p. 560. They differ but slightly either in character or ornament. The three last articles are slender pins, with cup-shaped heads, of which the central one, No. 498, has been figured and described at p. 558.

Of the foregoing, the first, No. 372, was found in Bride-street, Dublin, and described as No. 504 in Proceedings, vol. vii., p. 130. For Nos. 373. and 397, see Nos. 502 and 503, in Proceedings, vol. vii., p. 130. Nos. 375, 376, 378, 408, 409, and 432, were procured in the Ballinderry crannoge. Nos. 381 to 392, and Nos. 395, 396, 417, and 421, were obtained from Gweedore Strand, on the coast of Donegal, and—*Presented by Lord George Hill*. See Proceedings, vol. vii., pp. 41, 159. Nos. 374, 402, 442, 403, 404, 444, 446, 476 were procured from the Strokestown crannoges; 499, found at Loughran's Island, on the Bann, was—*Presented by Board of Works*. Nos. 377, 381, 413 and 418, procured from Arranmore, in Galway Bay, were—*Presented by W.R. Wilde, Esq.*; and Nos. 374, 419, 470, 487, 488, were—*Deposited by Sir Benjamin Chapman*; and Nos. 416, 443, 475, 477, and 478—*by the Royal Dublin Society*. Nos. 462, 463, 491, 493, 495, 496, were—*Presented by the Shannon Commissioners*; and No. 445, found in Upper Exchange-street—*by Park Neville, C. E.* See Proc. vol. vii., p. 162. No. 448, found in a fort in the townland of Drumgurragh, in Farney, county Monaghan, was—*Presented by Rev. Mr. Thompson*, April 26, 1853. No. 490 was found in Colonel Pallisser's demesne, county Kildare.

SHELF II. Tray **AAA**, contains a miscellaneous collection of one hundred and twenty-three articles, chiefly relating to personal deco-

ration, and numbered from 500 to 620. The top row is composed of rings,—either bracelets or armlets. No. 500, a thin bronze hoop, apparently a bracelet; $2\frac{1}{4}$ inches in diameter, and about $\frac{3}{8}$ wide. No. 501, ditto, broader and thinner, grooved, and decorated with minute cross-lines, has another enclosed; $2\frac{1}{2}$ by $\frac{3}{4}$ (Dawson). No. 502, ditto, a half-round in section, plain, ends over-lap; $2\frac{1}{4}$ by $\frac{3}{4}$. No. 503, a very perfect armlet, with a central circular aperture; cast, grooved on both sides; ring complete; $3\frac{1}{2}$ by $\frac{1}{2}$. No. 504, the large double bracelet, figured and described at p. 570. No. 505, a thin narrow torque armlet, with a central broad aperture, like No. 503; one end of the slender round twisted hoop is fastened in a rude socket, in the broad circular decoration. Possibly two other bands were originally affixed in the same fashion to the central decoration; it is $3\frac{1}{2}$ in diameter. No. 506, the double torque armlet figured and described at p. 570. Nos. 507 and 508, two pieces of bronze torque, imperfect, probably portions of armlets. No. 509, a bright copper penannular armlet, figured and described at p. 570. No. 510, fragment of a similar article of bronze, but with a wider cup, and much resembling some of the gold ornaments in the Academy's Collection. No. 511, a penannular copper ring, resembling 509, but not of such red metal, and not cupped at the extremities; $2\frac{3}{4}$ in greatest width. Second row.—No. 512, a thin flat ring, with separate and overlapping ends; decorated with cross indentations on external half-round surface; $2\frac{1}{2}$; found in Dublin. No. 513, a perfect, beautifully cast ring, with central lozenge-shaped ornament, and highly decorated with very minute raised circles all round; $1\frac{3}{4}$ in diameter from out to out; it may have been a brooch-ring. No. 514, a small slender torque-pattern ring; $1\frac{1}{2}$ in diameter; found in one of the Strokestown cranneges. The three next articles are chains, the two first of no great age. No. 515 consists of three portions,—a square watch chain; four simple loops; and a pendant termination; $12\frac{1}{4}$ long. No. 516, a slight simple looped chain, 6 inches long. No. 517, ditto; 8 (Sirr). No. 518, a small curiously-constructed chain, with a pendant, figured at p. 572 (Sirr). No. 519, a hooked pendant, with portion of chain attached; $3\frac{1}{4}$ (Sirr). No. 520, the beautiful pendant hook, inlaid with silver, figured and described at p. 572. No. 521, a hook pendant, with large decorated boss, rudely coated

with green enamel. The third row consists of eleven large shoe, belt, knee, and garment buckles, not of any great age, but most of them of patterns long since disused. In shape they are round, flat, quadrangular, and oval, and in size they vary from $2\frac{1}{4}$ to $4\frac{1}{4}$ inches. Nos. 522 and 523 were—*Presented by Very Rev. Dean Butler*; 524—*by the Shannon Commissioners*; 526 and 527—*by R. A. Gray, C. E.*; and 528—*by Major John Brown*. The fourth row consists of seventeen buckles, smaller and more antique than the foregoing, and also three swivel-loops, one of which is quite perfect. Many of the buckles present curious forms, and exhibit the fashion in this article at the respective periods to which they belong. No. 540 was found at Newtown-Trim, and was, with 544—*Presented by the Very Rev. Dean Butler*. See Proceedings, vol. vi., p. 171.

The fifth row consists of articles of undoubted antiquity. No. 553 is a large bronze ring, possibly an armlet; $3\frac{3}{4}$ inches in diameter externally; much corroded on its internal surface, where the thin bronze coating having been removed, allows the central filling with lead to be seen. No. 554, ditto, perfect; 4 massive. On its lower and outer edge may be seen an aperture, covered by a bronze plate, through which, probably, lead was poured in; No. 555, a bronze ring, with side apertures, like those on Trays **CCC**, which are represented at p. 579; 2 in greatest diameter. No. 556, ditto, smaller; $1\frac{3}{4}$. Both these were—*Deposited by the Royal Dublin Society*. No. 557, a thick flat ring, of yellowish-red metal; silver plated; $1\frac{3}{4}$.

The seven following articles are the decorated and gilt plates referred to at p. 572; and found in the railway cutting at Navan. No. 558, a long plate, with curved head rising out of upper edge; slightly curved on the flat; the decoration is very sharp, and much of the gilding remains; $1\frac{1}{2}$. No. 559, ditto, larger; figured and described at p. 575. No. 560, a cross-shaped ornament; identical with, and probably cast in the same mould as, No. 562; much coated with verdigris; a little of the gilt plating still remains on its central portion; it has four back-loops; $2\frac{1}{4}$. No. 561, a large decorated boss, in good preservation, figured and described at p. 575. No. 562, identical with 560, is figured at p. 574. No. 563, another ornament, of a different pattern, consisting of a central boss, and three square arms, with an inferior semicircular enlargement; it is

highly and most minutely decorated, and has a central jewel setting; a considerable portion of the gilding still remains over the surface; the decoration on the lateral portion of this specimen resembles twisted animals, like those on the carved bones figured at page 346, whereas that employed on the upper member of the cross consists of a double spire, not unlike the Scandinavian style of ornament, but the centre of each spire is of the true Celtic character. The general features of the ornamentation in this specimen resemble those in No. 561; four loops; $2\frac{5}{8}$. No. 564, a small, oblong, four-cornered plate, like No. 558, but without upper enlargement; decoration very minute, and well plated with gold; two loops; $1\frac{3}{4}$ by $\frac{5}{8}$. The remaining articles in this row, from No. 565 to 572, consist of simple bronze rings, most of them flat, varying in diameter from 1 to $1\frac{1}{4}$ inches.

The sixth row consists of rings, and small buckles. No. 573, a rude flat copper ring; $1\frac{1}{2}$. No. 574, a twisted bronze penannular ring, fastening by a catch, like a modern key-ring; $1\frac{1}{2}$. No. 575, a penannular ring, very similar to some of the silver armlets; large, and four-sided in centre, becoming flattened towards the extremities, the outer edges of which are beautifully decorated with minute circles; it is one of the most elegantly formed articles in the bronze collection, and looks like a child's bracelet; found in the city of Dublin. No. 576, a plain ring; $1\frac{1}{4}$. No. 577, ditto, flat twisted; $1\frac{3}{8}$. No. 578, ditto, with an aperture, as if for the insertion of a stone; possibly a finger-ring. No. 579, a bronze finger-ring. Nos. 580 and 581, ditto, penannular. The remaining articles in this row consist of twenty-seven buckles, several of which are attached to bronze straps, and were probably used with spurs; some resemble hat-buckles; their history is unknown. Nos. 582 and 608 are large belt-buckles. No. 593 is decorated. The last row contains fourteen articles, of a miscellaneous character, numbered from 609 to 623. No. 609 is a large double swivel. No. 610, a scollop-shaped article, like a locket. No. 611, a lozenge-shaped, flat, decorated article; $1\frac{1}{2}$; with a loop at each angle, and a central stone-setting; possibly the pendant of a breast-pin. No. 612, a thin egg-shaped disk, dished, with five holes; apparently a decoration.—*Presented by the Shannon Commissioners.* No. 614, ditto, with four holes. No. 115, ditto, massive, with loop at upper edge; $2\frac{3}{4}$;

found with the foregoing, and other bronze antiquities, at Tullaghogue, near Dungannon.—*Presented by Rev. Dr. Porter.* No. 616, a pendant, like a key-hole cover. No. 617, ditto, of graceful cage-work; possibly an earring. No. 618, an ornamental disk, resembling a badge; $1\frac{1}{2}$. No. 619, ditto, rude, lozenge-shaped; $2\frac{1}{2}$. No. 620, a decorated pendant hook, like No. 521. No. 621, a circular open-work stud; $1\frac{1}{2}$. No. 622 ditto, imperfect; and 623, perfect.

BRONZE, VI.—GROUND FLOOR, SECOND COMPARTMENT.

SHELF I., Tray BBB, contains a series of articles connected with a suit of chain-armour, and numbered from 1 to 54. No. 1 is a large neck and chest decoration, composed of chain-bosses and shoulder-plates, figured and described at p. 576. Nos. 2 and 3, large bosses, of light golden bronze, originally encircled with small loops, having central concave studs, and trumpet-mouthed apertures on each side. Both articles appear to be identical, and are slightly imperfect. No. 3 is figured and described at p. 578. For description of No. 4, placed in centre of tray, see Fig. 492, p. 578; and for No. 5, see Fig. 493, on page 579. Nos. 6, 7, 8, 9, 10, and 11, belong to a class of article very frequently found in Ireland, and which evidently formed a portion of chain-dress decoration, each consisting of a massive ring, with lateral trumpet-mouths, through which a connecting strap of bronze joined the ring-chains; see Nos. 7 and 8, in which that portion remains. In size they vary from No. 11, which is only $1\frac{1}{2}$, to No. 7, which is $2\frac{1}{2}$ in greatest diameter. In shape they are somewhat oval, and are well represented by Fig. 494, on p. 579. These articles are connected with a chain of double or treble links, and of a larger size than those belonging to the more complete article, No. 1. To each side of this tray, several other strands of chain have been attached, some of which were found along with No. 1; see p. 576; and are numbered according to their several varieties and shape, from 12 to 54. No. 15 is the large double ring, Fig. 490, p. 578. No. 16, a large double ring; $1\frac{1}{2}$ wide; both together are $2\frac{1}{2}$ long. No. 20 is a link of five rings, measuring $3\frac{1}{2}$ by $\frac{3}{4}$. The other rings decrease gradually to the size of those used with No. 1.

Tray CCC contains forty rings, for armour decorations; numbered from 55 to 94. The three first rows contain eighteen rings,

varying in diameter from less than an inch to about 2 inches; plain, perforated on each side for the passage of a traversing connecting strap, or wire, but without lip or decoration around aperture. In thickness they vary from $\frac{1}{4}$ to $\frac{5}{8}$ of an inch; some are solid, and others are hollow; see Nos. 59 and 60. The fourth row contains articles of the same description, but still larger, and all solid, and varying in size from $1\frac{7}{8}$ to $3\frac{1}{8}$. The fifth row consists of three large hollow rings. No. 77, imperfect, is $1\frac{3}{8}$ thick, and $4\frac{1}{4}$ in diameter of ring. No. 78 is thinner, and only $3\frac{3}{4}$. No. 79 is $3\frac{1}{2}$ wide, and $1\frac{1}{2}$ thick. The remaining fifteen rings have lateral apertures, with raised mouths, and vary in size from $1\frac{5}{8}$ to $3\frac{1}{8}$ in greatest diameter. They present much variety, both in shape of ring and later apertures, the latter of which are but slightly everted, and none of the true trumpet-shape. In No. 81, the tubular margins of the apertures incline inwards, and in No. 91 they are peculiarly small. No. 86 is elongated in shape. They are all more or less solid, either from casting, or by subsequent filling up with lead or composition.

Tray DDD contains one hundred and thirty-seven plain bronze rings, numbered from 95 to 231, and varying in diameter from $\frac{7}{8}$ to 3 inches, and in thickness from $\frac{1}{8}$ to $\frac{3}{8}$. None of them appear to have formed portions of loops or ring-chains, but were cast single, and present great diversity in thickness, as well as fineness of casting. They are all solid, and belong to that class of article heretofore styled "ring-money;" but in their formation there does not appear to be any arrangement as to either size or weight. They were probably used either for harness, or in connexion with armour or personal decoration. The two last articles on this tray are slender and penannular; both may have been used as bracelets.

Tray EEE contains three hundred and sixty-nine small bronze rings, numbered from 232 to 600. The first twelve rows are made up of small thick rings, varying in width from $\frac{5}{8}$ to $\frac{3}{4}$ of an inch; all cast solid; single, and mostly flat. Some are a little worn on one side of the inner edge, as if from attrition; see No. 463. The eleven lower rows are composed of much slighter and larger rings, mostly flat, and varying in size from $\frac{3}{4}$ to $1\frac{3}{8}$; several are corroded on the surface. Nos. 544, 545, and 546, are peculiarly thick. No. 593 looks as if punched out of a piece of metal, and not cast. Nos. 471, 473, 476, 479, and 486, were found at Headford, county Galway, and—

Presented by R. J. M. St. George, Esq. A large proportion of the remainder were discovered near Cashel, county Tipperary.

Tray FFF contains thirty-two articles, totally different in character from the foregoing, and consisting of a few small, and a large number of massive rings; numbered from 601 to 632. The top row contains seven thick rings, from $\frac{1}{8}$ to $2\frac{1}{4}$ in diameter. No. 601 is not closed, and has transverse perforations on both sides of section, as if for uniting it by a wire. No. 602, a broad ring, ornamented on surface by transverse and oblique lines. No. 603 was, with 608—*Presented by the Shannon Commissioners.* The latter was found near the site of the old Bridge of Banagher. In the second row, Nos. 609 to 614 form a chain of six rings, varying from $1\frac{3}{8}$ to $3\frac{1}{2}$ in diameter, looped into each other by three enclosed specimens. No. 615 is a solid bronze armet, not Irish.

The third row contains four slender rings, averaging $3\frac{1}{2}$ inches across, on the two first of which play small perfect cast rings, one of which is much worn, as if from long use. The rings on the fourth and fifth rows are larger and thicker, and were either cast in two sections, and then united, or hammered upon a mandrill, and subsequently filled with a composition. One small ring plays on No. 625, and two on No. 626; figured at p. 570. No. 621 was found in gravel, under 4 feet of peat, in townland of Tinderry, barony of Eliogarty, county of Tipperary, and—*Presented by the Board of Works.* The small rings which play on the larger ones are identical in character with many of those arranged on *Tray EEE*. The six last are very large, averaging $4\frac{1}{2}$ wide; the last is $1\frac{1}{2}$ thick. Some are hollow, and others partially so; see No. 631, where a want on the side shows the interior, as well as the mode of joining. All these were evidently worn as personal decorations on the extremities. No. 630 was found at Headford, county Galway, and—*Presented by R. J. M. St. George, Esq.*

Tray GGG contains fifty bronze buckles, double or single, of different patterns, numbered from 633 to 682; but none are of much antiquity; in size they vary from $\frac{7}{8}$ to $\frac{1}{2}$ inches; some were possibly used in harness, but others were evidently personal. No. 660 was—*Presented by R. A. Gray, C. E.*

RAIL-CASE P, continued from p. 518, contains a number of small specimens, appertaining to tools, food implements, household eco-

mony, music, personal decoration, and miscellaneous articles, not placed on trays, but numbered in continuation of their respective species, most of which have already been described.

Tools, continued from p. 552.—No. 86, a brass awl, with square shoulder; $3\frac{1}{2}$ inches long. No. 87, ditto, from Gweedore, and—*Presented by Lord George Hill*. No. 88, a curved article, with flattened extremities, like a modelling tool, resembling a stylus; $4\frac{1}{2}$. No. 89, ditto, single, notched at one end; plate portion decorated on one side; $2\frac{1}{2}$. No. 90, ditto, not notched. No. 91, a narrow, curved implement, flattened at one end; 7: see No. 101. No. 92, a very perfect narrow spoon-shaped implement, with circular handle; 7. No. 93, a long narrow tool, sharp at one end, bent and circular at the other, like a modelling tool; $6\frac{1}{2}$. No. 94, ditto, but imperfect in point; $4\frac{1}{2}$. No. 95, a long, narrow, curved implement, with boss near centre; $9\frac{3}{4}$. No. 96, a bronze circular file, straight, like a modelling tool. No. 97, bronze implement, like a tool handle; $4\frac{1}{2}$. No. 98, a straight implement chisel-edged at both ends. No. 99, a small bronze forceps-shaped implement, with half-round spring; holes in legs, as if for the insertion of points; $2\frac{3}{4}$. No. 100, a hinged implement, evidently a tool, but of unknown use; $3\frac{7}{8}$ (Dawson). No. 101, a two-pronged article, like a surgical instrument, riveted at one end; $5\frac{3}{8}$ —*Presented, with No. 91, by Shannon Commissioners*. No. 102, fragment of a delicate jeweller's forceps; $2\frac{7}{8}$. No. 103, a small bronze tool, square at one end, to fit aperture in leg of No. 99.

Articles of Household Economy, continued from p. 553.—Eighteen needles, numbered from 77 to 94, and varying in length from $1\frac{1}{2}$ to $4\frac{1}{4}$. Nos. 77 and 78 are figured at p. 546. No. 96, from Gweedore, was—*Presented by Lord George Hill*; and No. 93, from Dublin—*by Park Neville, C.E.* No. 95, a large brass thimble, found at Trim—*Presented by Dean Butler*. No. 96, the toilet article, figured at p. 549. No. 97, ditto, larger; $3\frac{5}{8}$. No. 98, ditto, plain, with decorated head, wide fork; $3\frac{1}{4}$. No. 99, an ear-scoop, handle decorated; $3\frac{1}{4}$. No. 100, ditto, plain; a fine example of antique bronze, with greenish polished patina; $3\frac{1}{2}$. No. 101, the bronze razor figured and described at p. 549. No. 102, ditto, smaller; $2\frac{3}{4}$. No. 103, ditto, imperfect; $2\frac{1}{4}$. No. 104, a tweezers, figured at p. 549; procured with No. 110; from Ballinderry. No. 105, ditto, slender, decorated; $2\frac{5}{8}$. No. 106, ditto, plain. No. 107, ditto, slender.

No. 108, ditto, small broad blade, with running loop ring at end; $1\frac{1}{2}$. No. 109, ditto, small, rude; $1\frac{1}{2}$. No. 110, ditto. No. 111, the ring-lock figured at p. 548. No. 112, top of weight-box. No. 113, a weight-box, perfect, and highly ornamented, with compartment at bottom for holding small weights; $1\frac{1}{2}$. No. 114, brass ink-bottle, in shape of trooper's boot; $3\frac{1}{2}$ long. No. 115, a brass ink-bottle, with rude decorations on sides; suspending loops; $1\frac{1}{2}$. No. 116, ditto, oval, with detached cover; five suspending loops; $2\frac{1}{2}$.

Personal Decorations—continued from Tray **AAA**. No. 621, a large double-looped button, with rude cast decorations in front, each perforated with double holes behind; $3\frac{1}{2}$ inches in length of article. No. 622, a plain button. No. 623, the enamelled button figured at page 572. No. 624, an enamelled button covered with glass; "found in the mountain, four miles from the Seven Churches, Glendalough." No. 625, a double shirt-stud, or wrist-button; perfect, decorated. No. 626, a portion of antique buckle. No. 627, a pendant, with loops posteriorly. No. 628, a piece of decorated open-work, like the end of an earring. No. 629, a small bronze plate, decorated with the figure of a griffin; riveted. No. 630, ditto, of open-work.

Next follows a collection of antique Thumb and Finger-Rings, the largest of which, No. 631, here figured the true size, is apparently of very great antiquity. The square central depression is roughened irregularly, possibly for the reception of enamel paste; but in the side concave hollows the raised markings are too regular for that purpose, and much resemble some of those lines incised on the

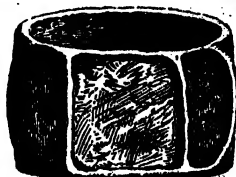


Fig. 497, No. 631.

stones of the tumulus at New Grange; the hoop is also decorated, but is slightly corroded; it was found in the county Cavan. No. 632, a large brass thumb-ring, with seal, and C. I. H. B. in Irish characters at top; $1\frac{1}{2}$ wide. No. 633, ditto, with monogram on stamp; has remains of gilding. No. 634, a thumb-ring, resembling No. 631. No. 635, a broad ring, rudely decorated on face (Dawson). No. 636, a thumb-ring, with torque-pattern hoop, and seal at top, bearing a heart and ancient inscription; remains of gilding; probably ecclesiastical. The remaining specimens of this description

the finger-rings. Nos. 637, 638, and 639, are small, flat, decorated hoops, enlarged in front. No. 640, a thin, flat hoop of red metal, with a rude decoration representing a heart between two hands. No. 641, a finger-hoop, open at side, rudely decorated with antique markings. No. 642, a plain thick hoop, with an inscription on the inside; found in "an ancient building, in the Co. Carlow." No. 643, a small thin decorated hoop. No. 644, a thin twisted hoop, with a heart-shaped decoration in front. No. 645, a hoop, with a raised antique stone-setting. No. 646, a chain of three decorated rings, looped in each other (Sirr). No. 647, a large collection of ring-chains; like those already described and figured at p. 577; well cast; several consisting of five loops, and one of seven; many are joined together with bronze straps; found, with a gold ornament, in the county of Sligo. Nos. 648, 649, and 650, are three small bronze straps, cleft at one end, and solid at the other—possibly spur loops.

The total number of articles of bronze or brass belonging to Personal Decoration, not including spurs, at present in the Museum, amounts to 1433, viz.:—620 on the four large trays in the Gallery; 30 in this rail-case; 683 on the six small trays in the second compartment of the northern ground-floor, of which there are a great number of duplicates; and 100 upon the different "Find" trays in the third compartment on the southern ground floor.

AMUSEMENTS.—The only object in this Case apparently used in a game of any description, is the bronze die, No. 1, measuring $\frac{7}{8}$ of an inch on each face, and having a heart, diamond, club, and spade, on four sides, the remaining faces being blank.

MUSICAL INSTRUMENTS—are represented by a collection of twenty-two harp pins, varying in length from $2\frac{1}{2}$ to $4\frac{1}{2}$ inches; square in the head, and perforated in the small extremity for holding the string. They are numbered from 17 to 32, in continuation of the trumpets, described at p. 633; the majority were obtained from crannoges. [For miscellaneous articles, see continuation on p. 636.]

HORSE-TRAPPINGS.

Connected with personal decoration and costume, *Horse-Trappings* follow next in order, according to the arrangement and the classification adopted in this Museum. Such frequent mention is made in early Irish writings of the chariot-roads,

together with chariots, horses, harness, and horse-trappings, that we might naturally expect to find some remnants of them even at the present day. Topographers have recognised the sites of some of our ancient roads, especially those in the vicinity of the remains of the royal residence at Tara. Chariots, with their occupants, and mounted warriors, have been sculptured on a few memorial crosses, especially those of Kells and Kilclispeen; and one of the largest collections of ancient harness in north-western Europe is that now preserved in the Royal Irish Academy. It is arranged on thirteen Trays, from **HHH** to **UUU**, in the second and third compartments on the ground-floor in the northern side of the Museum; and consists of bronze spurs, stirrups, saddle-knobs, bridle-bits and pendants, harness-studs, bosses, and other decorations, a chariot trace, cro-tals, &c., amounting altogether to as many as 282 specimens.

SPURS, although now fallen into disuse as a portion of the indispensable costume of an equestrian, were articles of great importance from about the middle period of the Christian era to a comparatively recent day. In shape they presented great variety, and had much art expended upon them; some were very costly, and used as the insignia of knighthood. They were made of iron, bronze, silver, and even gold; many were gilt. The Academy possesses a collection of forty spurs, arranged on Trays **HHH**, and **III**, including types of nearly all the known varieties of these articles, which hold a middle place between personal costume and horse-trappings.* The earliest form of spur was that known as the "goad" or "prick spur," consisting of a short conical spike projecting from the back of the fork or bow, and without a rowel or wheel. Of this very rare variety, the accompanying illustration, Fig. 498, No. 1, is a good specimen. Its total length is $4\frac{1}{2}$ inches; the legs of the fork are unsymmetrical,



Fig. 498, No. 1.

the inner one being the shorter, and the strap-holes are different on each side. No. 17, Figure 499, is the representative of several similar spurs in the Collection, remarkable for the curved bars of the fork or bow, with loops on its lower edge, for the attachment of straps or chains; the rowel is of moderate size, and the lower and back portion of the bow is rudely decorated. Small bronze loops are attached to the terminal apertures in the fork; its total length is 6 inches. It was found at St. Wolsstan's, on the Liffey,



Fig. 499, No. 17

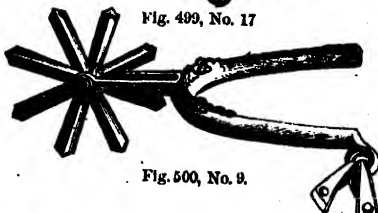


Fig. 500, No. 9.

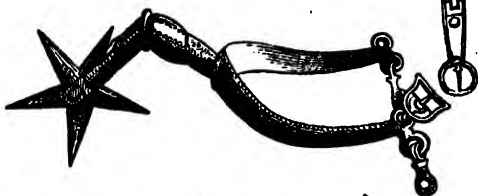


Fig. 501, No. 20.

county of Kildare. The second illustration, No. 9, Fig. 500, represents one of the most perfect and beautiful articles of its kind which has been discovered in the British Isles,—of antique bronze, covered with a smooth greenish patina; very narrow in the bow, and having a large blunt rowel of eight bars, greatly disproportionate to the other parts of the article. It is $6\frac{1}{2}$ inches long, and only $2\frac{1}{2}$ in the clear of the fork, the terminations of which are, as in the case of the prick-spur, unsymmetrical, having on one side a mortice-hole, and on the other a loop, projecting below its edge. From this loop depend two metal straps—one clasped, for the attachment of a leather fastening, the other hinged in the centre, and ending in a buckle; both in the highest preservation, and decorated with minute notches along their edges. These and similar straps and buckles, afford us a clue to the

uses of a great number of small articles attached to Tray AAA, or placed in Rail-Case F. Posteriorly, the upper edge of the bow is decorated with a minute open-work trefoil pattern. It, and another article of the same description, were procured with the Dawson Collection, and said to have been found in the same locality, with an interval of many years. By the fourth figure is presented the last variety, the characteristic of which consists in having the rowel-stem large, and bent at an angle, so as in many specimens to represent the human arm. In this example, No. 20, Fig. 501, the bow is only $2\frac{1}{2}$ inches in the clear, and bent so as to fit close round the tendo-Achillis, and pass beneath the projections of the ankles. Its total length is $6\frac{3}{4}$ inches, of which the stem and rowel are more than one-half. It is highly decorated all over the external surface, chiefly with that form of beaded ornament shown on the costume of the figure represented among the miscellaneous articles at page 640, so that it probably belongs to the same age. The buckles and loops are of iron. Spurs of this description, with large rowels and angular stems, resemble those shown upon the effigies of knights in mail armour. There are six specimens of this description in the Collection.* It is remarkable, that while the bronze spurs are so small in the bow as to appear like heel-spurs, many of those of iron are wide enough to fit on the calf of the leg.

SADDLES—in Irish, *daillait*, a saddle—are represented among the bronzes by four pommel-decorations on Tray 000, of which the accompanying figure, drawn one-third the natural size, from No. 149,



Fig. 502. No. 149.

* Although there is no ancient Irish name for spur or stirrup, the term *Deili-gach árostoe*—"the thorn that incites"—is occasionally applied to a shoe-spur in Connaught. In O'Dugan and O'Heerin's *Topographical Poems*, golden spurs (*spuir*) are mentioned under A. D. 1372-1420. Spencer says the Irish had neither saddles nor stirrups; but, like many other assertions of that author, it is refuted by modern investigations. Metal stirrups were unknown in England until about the sixteenth century. See Fosbroke's *Encyclopædia of Antiquities*.

is a good illustration. It is cut off beneath obliquely, and spreads out into flanges with rivet-holes for attaching it to the saddle-tree. In the great Brahe Museum at Scokloster, near Upsala, may be seen the largest collection of ancient saddlery at present in Europe; and there several such articles as that figured above have been preserved.* Heretofore, these articles were believed to be sword-pommels.

There are eight bronze STIRRUPS arranged on Tray JJJ, of great diversity of form, and some of them highly decorated, of which the following illustrations are good examples. No. 46, Fig. 503, is a very small triangular stirrup, $4\frac{3}{4}$ inches high, and $3\frac{3}{4}$ wide, with the strap-bar placed behind a decorated plate which rises above its level; but it is all cast in the one

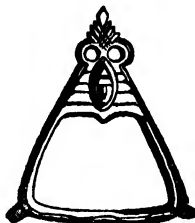


Fig. 503. No. 46.

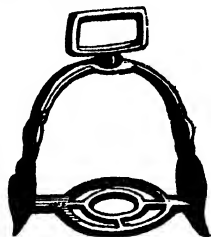


Fig. 504. No. 47.

piece. The oval ornament in front represents a human face. No. 47, Fig. 504, is small, and highly decorated; 5 inches high, and 4 wide, with a square swivel-staple at top for the attachment of the strap, the wheel-shaped foot-plate being $2\frac{3}{4}$ wide. Some of the bronze stirrups in the Collection were gilt.

BRIDLE-BITS—in Irish, *bealmhach*—abound in the Academy's Collection, amounting to as many as eighty-eight specimens, either complete or fragmentary, and are arranged on five Trays, from ~~KKK~~ to OOO. They may be divided into—1, the simple riding snaffle or burdoon, with a strong mouth-piece in two parts, having an exceedingly well-fitted hinge-stud between, and large cheek-rings, which, as well as the extremities of the bit, are in many specimens highly ornamented, and in some instances jewelled or enamelled: 2, the double-

* The Author is indebted to the Baron von Kræmer, Governor of Upsala, for great kindness in facilitating his antiquarian researches while in that part of Sweden in the summer of 1859.

rein driving-bit, without an intermediate piece in the hinge, but with metal straps or rods, running on the cheek-rings for the attachment of the reins; and 3, the small (and probably driving) bit with an iron mouth-piece, and no rings, but broad and in most instances highly decorated open-work cheek-plates for the attachment of the reins.

The uppermost of the three illustrations, on page 605, is a good example of the first variety, with a raised cast ornament on the mouth-piece, and decorated studs raised on one face of the rings, for limiting their play in the holes of the bit. The mode in which these rings were formed is a subject of interest to the inquirer into the manufactures and workmanship of the ancients. In several instances the ring is spliced and riveted: see Nos. 60, and 61. In a few, a brazed joining may be observed on the outer side of the ring. The majority, however, appear to have been cast along with the mouth-piece; but what contrivance in the moulding, both of this portion and in that of the hinge, was employed, is matter of speculation; as in No. 75, on Tray ~~MMMM~~, and which was never used, the narrow portion of the ring barely turns in its collar. In several instances the ring was cast with but one stud, and the second was riveted to an enlarged flat boss on the opposite side. In some cases the pivot passed through the ring, but in others it went down only for a sufficient depth to fasten the stud. By this means this decorated portion of the ring may, in the casting, have been removed from the mouth-piece, and thus interfered less with the flow of the metal; and could also be fitted and adjusted better subsequently. In two very remarkable examples, Nos. 77 and 78, the ring was cast in a penannular form, with hollow bulbs at the extremities, into which the pivot that played in the hole of the mouth-piece passed—by springing back the ring-ends. The pivot was then riveted across; and in No. 77 both it and the rivets were formed of cast-iron, the uncut slag of which still remains. For the details of this curious combination of bronze and iron, see page 617.

No. 55, on Tray **XXX**, Fig. 505, is $10\frac{1}{2}$ inches long, and 3 in diameter of each ring, the upper decorated studs of which are fastened by pivots; and, like all the others of this variety, the intermediate space between them is smaller than the rest of the ring, although not caused by wearing, as in other cases. It was found with pendant, Fig. 517, and another bridle-bit, on an ancient battle-field in the valley between the hills of Screen and Tara, county Meath. The second and third illustrations, Figs. 506 and 507, from Nos. 67. and 71 represent the second variety. No. 67 is $11\frac{1}{2}$ inches long,



Fig. 505, No. 55.



Fig. 506, No. 67.

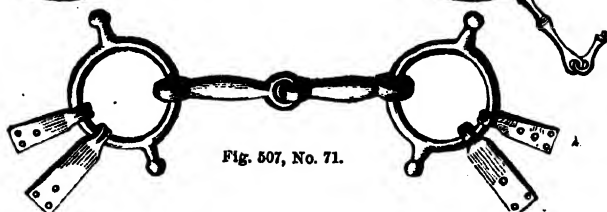


Fig. 507, No. 71.

and $3\frac{1}{2}$ across the ring, which plays freely through the bit-hole, and has bronze loops attached to it on both sides, one of which, 5 inches long, is here represented—in what manner the reins were attached to these rods is undetermined. The third illustration, Fig. 507, No. 71, also belongs to the second variety; and, like the foregoing, the mouth-pieces hinge without an intermediate portion. In place of studs, the rings have knobbed bars projecting from their outer margins, and four of the metal rein-staples are still *in situ*. It is much smaller than any of the foregoing, measuring in extreme

length but 9 inches; each ring is $2\frac{1}{4}$ wide, exclusive of the projections; it is one of the articles discovered at Navan: see page 573. Pieces of the buff leather remain between the sides of the metal straps in some specimens.

The details of several of the snaffle-bits of the first variety are well worthy of examination, presenting great beauty both in design and execution, examples of which are afforded by the two following cuts, drawn from Nos. 52 and 64. The former is a portion of a perfect well-preserved bit, $9\frac{1}{2}$ inches long by $2\frac{1}{4}$ wide in the ring, differing in decoration from that shown by Fig. 506. In the latter, drawn from a slender specimen, $12\frac{1}{2}$ inches long, and $3\frac{1}{2}$ wide in diameter of ring, the studs are counter sunk for the insertion either of stones, glass, or enamel. There are thirty-seven bits of these two varieties, twenty of which are quite perfect, and most of them in fine preservation.*

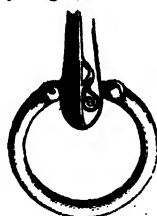


Fig. 508, No. 52.

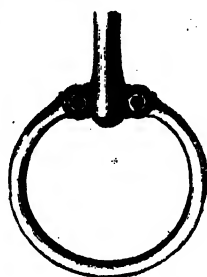


Fig. 509, No. 64.

In the third variety there is much greater diversity both in shape and ornamentation than in the two former; but, although there are the remains of as many as fifty-one distinct specimens, in no single instance is this form of bridle-bit perfect on both sides, and connected by its iron mouth-piece.† This may be accounted for by the lightness of the cheek-pieces themselves rendering them liable to fracture, but is particularly due to the circumstance of the mouth-piece having been formed of iron. At first the cheek-plate was a plain curved

* In the Proceedings and Papers of the Kilkenny and South-East of Ireland Archaeological Society for November, 1867, may be seen a very beautiful chromo-lithograph of a bridle-bit, with highly decorated and enamelled flat rings, said to be found at Killeevan, near Analore; but neither the Guelloche pattern, nor the Grecian scroll thereon, is Irish—the former is purely Scandinavian.

† In Mr. Shirley's Account of the Territory and Dominion of Farney, may be seen an engraving of a very perfect bit of this description, with bronze cheek-plates attached to the iron mouth-piece, p. 22.

plate of metal turning backwards from a straight bar to which the iron mouth-piece was attached, and having a semi-oval loop behind, on which the rein-staples—generally two in number—played, as shown in the three following illustrations, drawn from specimens on Trays **NNN** and **ooo**. No. 101, Fig. 510 is plain, and measures 6 inches in its extreme width. No. 99, Fig. 511, imperfect, is beautifully decorated

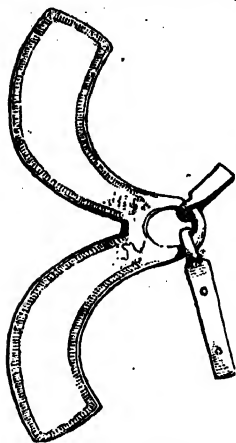


Fig. 510, No. 101.

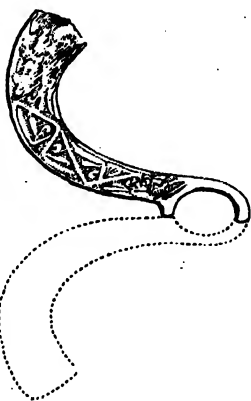


Fig. 511, No. 99.

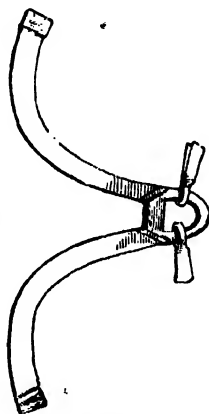


Fig. 512, No. 95.

with a raised ornament somewhat in that of the style of the twelfth century. No. 95, Fig. 512, is remarkably slender, and measures 6 inches across; the two metal rein-straps still remain on the posterior loop of this variety, of which there are two examples in the Collection;—both found in the river Bann, and—*Presented by the Board of Works*.

In the next series of illustrations, we perceive an advance both in ornamentation and purpose; for, by attaching the reins at a distance from the mouth-piece, a better purchase was secured, and the power of a curb effected. This is well shown in No. 103, Fig. 513, in which the cheek-pieces, composed of single bars, $4\frac{1}{2}$ wide, end in dogs' heads, and to the posterior member of which the rein-staples are attached. A still more simple bridle-bit is that shown by No. 91, Fig. 515: it is $4\frac{1}{2}$ wide, flat on one side, but triangular, and also decorated

on the other. A portion of the iron mouth-piece and two rein-staples remain. Of the decorated specimens, there are at least three sub-varieties—the *Horse-pattern*, of which, No. 132, Fig. 514, imperfect, is a good example. It is much worn, but, when complete, measured $4\frac{1}{2}$ inches in width; it was—*Presented by W. Longfield, Esq.* Of this variety there are five



Fig. 513, No. 103.



Fig. 514, No. 132.



Fig. 515, No. 91.

other specimens, Nos. 112, 113, 121, 122, and 130. Another form of decoration, belonging to the same description of cheek-piece, is the *Dragon-pattern*, of which there are several specimens, see Nos. 105 to 108, 110, 111, 117, 120, 124 to 128, and 131, &c. A third sub-variety of cheek-piece ornamentation resembles an inverted letter B—all the four specimens of which are beautifully cast, and in high preservation, see Nos. 104, 109, 116, and 125.

The fact of the combination of bronze and iron, perhaps to economise the former, in all the specimens of the third variety, as well as the style of ornamentation, evidently refers these articles to a later period than those of the first and second varieties. In a few comparatively modern specimens—see Nos. 134 and 135—the cheek-piece is straight, like that in a snaffle-bit of the present day. For the details of the cheek-pieces, see description of Trays **NNN** and **ooo**, pages 618 to 619.

PENDANTS.—Scarcely a year passes without some bronze

spur-shaped articles, like those figured below, being found in our bogs, chiefly in Connaught. They vary in length from 10 to 14 inches, and in breadth from 4 to 8. Many are highly decorated, and some were enamelled on the enlarged extremities of the stem and bow (see Fig. 519). The straight portion terminates in a knob, either plain or decorated; or is hollow for holding a plume of hair or feathers, like similar head-stall ornaments attached to the bridles of most cavalry regiments until very recently. By the public these articles have been regarded either as spurs worn on large jack-boots, or decorations affixed to forehead-bands, and which rose above the horses' heads. Others believe them to be censer-holders; but a careful examination and comparison of the thirty-two specimens on Trays **PPP**, **QQQ**, and **RRR**, will show that none of these hypotheses are tenable. They were evidently bridle ornaments, but are too narrow to fit on any horse's head; and the loops at the



Fig. 516. No. 171.

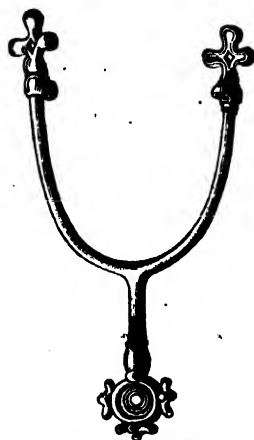


Fig. 517. No. 177.

ends of the forked extremities, or (as in some cases) on the insides of these portions, are in nearly every instance worn in such a manner as proves that they were

suspended, and not worn in an upright position. Figures 516 and 517, from Nos. 171 and 177, represent typical specimens of this ancient horse-trapping. The former is $12\frac{1}{2}$ inches long, and $4\frac{1}{8}$ wide; it is in fine preservation, and is decorated both upon

the knob and external surfaces of the prongs by a raised cast line, shown in the central illustration of that Figure. It was

found along with the bridle-bit, Fig. 505, and is decorated in the same manner.

No. 177, Fig. 517, is shorter and broader, and the ornamentation more elaborate; it is here drawn in perspective, in order to exhibit the decoration at the ends of the bow and stem, as well as the suspending loops, which are placed at right angles with the line of the fork, and, like all the others of this variety, are worn underneath: one leg is shorter than the other. By the two following cuts (one-half the true size) are shown the details of the extremities of Nos. 171 and 177, the former of which is figured above; and the latter, which is drawn from a very perfect and beautiful specimen—*Deposited by the Royal Dublin Society*—also shows the remains of red enamel upon the decorated boss within the outer rim. These articles would appear to have been slung from the rings of the bridle-bit, or were attached beneath the horse's jowl. In the latter position, they could only serve as ornaments; in the former, they would prevent the horse from grazing: see also the author's observations in the *Proceedings*, vol. vii., page 161.

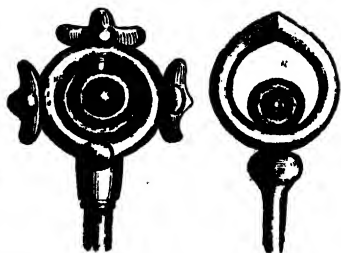


Fig. 518. No. 171. Fig. 519. No. 177.

Vallancey figured one of these pendants, from a specimen which still remains in the Museum of Trinity College, and stated that it had been suspended by *gold* chains from the bridle-rings; but acknowledged that he never saw the chains, as they were "secreted by the peasant that found it." As, however, in the case of the "spectacle-brooch" alluded to at page 566, an endeavour was made either to carry out the views of the author, or to establish the rumour as to the state in which the article was found—modern brass chains were added, as shown in the drawing in the *Collectanea*, vol. iv., pl. viii., fig. 1, and as may still be seen attached to the specimen. In order to make good the spur theory, a dealer absolutely cut

a slit in the knob, and inserted an iron rowel in one of these articles: see No. 175, page 621.

In the *Book of Rights* we read of various highly-caparisoned steeds among the stipends of the chief kings, and the tributes of the chieftains: and with them coats of mail and “rings” (possibly such as those already described at page 576, &c.), together with *Scings*, a term which O'Reilly translates “horse-trapping,” and which was probably part of a bridle, or its pendant. We also read of “bridles of old silver,” and in one entry of “twenty bridles, flowing, gorgeous with cruan and carbuncle.”*

CHARIOT FURNITURE.—Among the collection of articles found at Navan, and enumerated at page 573, was a boss of iron, $3\frac{1}{2}$ inches in diameter, covered on its external face with a plate of white metal, from the centre of which projects a massive bronze stud, in the shape of a dog's head (like that of a blood-hound), $1\frac{1}{2}$ inch long, having a human face engraved on its extremity. From a large aperture in this projection depends a piece of bronze chain, composed of two rings and two double loops, the latter resembling those of iron found in crannoges. There are but two purposes to which this article, represented by Fig. 520, could be assigned,—that of the attachment of a trace, or a straddle-terrett, for suspending the back-band or the shafts of a chariot (*Carbat*); but the size of the nail-holes in the boss, and an examination of the wearing



Fig. 520. No. 139.

in the stud-hole, inclines us to adopt the former hypothesis.

HARNESS STUDS, BOSSES, ROSETTES, and other Horse-Trap-pings, many of undoubted antiquity, and amounting to sixty-one specimens, have been arranged on Trays **SSS** and **TTT**, in

* Cruan, says Dr. O'Donovan, in his translation of the *Book of Rights*, was “some precious stone of a red and yellow colour,”—orange; probably it was amber.

the Northern Compartment of the ground-floor. They consist chiefly of decorated rings, or triangular loops: with three star-like staples attached, in several of which, as well as in those belonging to bridles, portions of thick buff leather remain. The accompanying illustration, drawn one-half the true size, from No. 194, found in the river Nore, affords a good example of this description of article, which was evidently a portion of the *Tiarach*, or breeching. Some of these specimens of ancient harness are elaborately decorated, first in casting, and afterwards, by the punch and graver.*



Fig. 521. No. 194.

CATTLE-BELLS and CROTALS.—Under the head of horse-trappings may be placed small globular bells, and pear-shaped articles called crotals, of the same nature, and of which the subjoined cuts are good illustrations. Fig. 522, No. 279, represents a globular sheep-bell, $2\frac{1}{2}$ inches in diameter, having at top a staple for its attachment to a strap or cord, and formed of two hemispheres of thin metal, joined in the centre, with apertures in both; those in the lower being connected by a wide split. The lower segment is decorated; and within the bell is a piece of metal, which acts as a clapper. A very musical sound is emitted by this and other bells of the same shape. On the bottom of several are the



Fig. 522, No. 279.



Fig. 523, No. 282.

* Simple and distinct as those articles now appear to the eye of common sense, they played their part in the theoretical archaeology of the past; for one of these has been figured by Vallancey as a "triangular talisman," see *Collectanea*, vol. iv. pl. xiv., fig. vi.

owners' initials. Of this variety of article there are thirteen specimens in the Collection, arranged on Tray **UUU**, and ranging in size from $1\frac{1}{4}$ to $2\frac{3}{4}$ inches, as in that figured on p. 612. The Irish antiquaries of the last century described and figured these small globular cattle-bells as crotals, confounding them with the ecclesiastical bells of a totally different shape and use; thus, Ledwich; and others following him, called such an article a "Bell Cymbal used by the clergy, and denominated a crotalum by the Latins; consisting of two metallic spheres, hollow, and containing some grains of metal to make them sound, being connected by a flexible shank." And, in order to make good the latter assertion, he represented two sheep-bells joined together. See "The Antiquities of Ireland," second edition, fig. v., p. 228. Walker, and later writers, followed in the same track. In connexion with articles of this description, may be seen a number of small, tinkling, globular bells, fixed on flexible wires, and evidently used for attaching to dogs or horses.

About thirty years ago, a great number of antique articles of a peculiar-coloured bronze were discovered at a place called Dowris, near Parsonstown, in the King's County, to which we have already referred at page 360 (see also trumpets, p. 626). Among these were discovered several hollow, pear-shaped bells, with rings at top, and pieces of metal internally; they, however, emit a very dull, feeble sound, but are evidently of the same class of articles as the foregoing, although, when found, they were believed to be the crotals of the ancient Druid priests, used in augury, and when pronouncing their oracles. That they are of great antiquity, may be inferred from the character of the metal of which they are composed, as well as the circumstance under which they were found. Figure 523, drawn from No. 282, on Tray **UUU**, $6\frac{1}{2}$ inches long, including the ring, and 8 in girth, is a good example of this article. In casting, the metal appears to have been poured into the mould by an aperture at the side, through which the

core of clay that contained the metal-clapper was broken up. In some instances the article is closed; in others, there is a narrow side aperture. The line of junction between the two sides of the mould is very ostensible in all, so that one of these would appear to have been cast in two portions, and joined afterwards. The rings and staples were cast together, possibly in the same manner as the bridle-bits described at page 604. That figured on page 612, and the two other similar articles in the Museum, were presented by Lord Oxmantown to the late Dean Dawson, with whose collection they came into the possession of the Academy. See *Proceedings*, Vol. iv., pages 237 and 423; and also *Dublin Penny Journal*, Vol. i., p. 376.

The following list enumerates all the horse-trappings, and articles appertaining thereto, in the Collection.

BRONZE, VI.—NORTHERN GROUND-FLOOR, CENTRAL COMPARTMENT.

SHELF II., Tray **HHH**, contains twenty-one spurs, numbered from 1 to 21. No. 1 is figured at p. 600—see, also, *Proc.*, vol. vi., p. 203. Nos. 2 to 8, on first and second rows, are antique bronze spurs, with cleft stems for rowels, and chiefly remarkable for the apertures at the end of the prongs, for attaching buckles or straps to. These are double in all, except No. 7, which has an open-worked bow. No. 5 was—*Presented by W. R. Wilde, Esq.* Nos. 9 to 12 are probably heel-spurs, with large rowels, mostly blunt; very narrow in the bow. No. 9 is figured on p. 601. No. 10 is the fellow of No. 9, and, with No. 11, has bronze straps and buckles attached to the bow-loops. In the latter, one prong is much longer than the other (Dawson). No. 12, a very narrow heel-spur, $5\frac{1}{2}$ inches long, and only $1\frac{1}{2}$ between prongs, which are sharp, and possibly passed into the leather; the rowel is $2\frac{1}{2}$ in diameter. The next row consists of five curved spurs, with loops on their lower edges, of which No. 17, figured on p. 601, is the type. No. 18 was—*Presented by the Rev. T. Porter*. In the fifth row are four spurs, with large sharp rowels, in which the rowel-stem is bent at an angle. No. 18 is highly gilt. No. 20 is figured and described at

p. 601, as the type of this sub-variety. No. 21 is $6\frac{1}{2}$ long, and only $2\frac{1}{2}$ between extremities of bow. The three last are ornamented.

Tray **III** contains seventeen spurs, and two rowels, numbered from 22 to 40. No. 22, ornamented on rowel and sides, is of the same description as No. 20, and only $2\frac{3}{4}$ wide. Nos. 23 and 24 have the rowel-stems bent at right angles with the bow. No. 27 (Sirr). No. 28, decorated with metal straps and buckles. In No. 32 the prongs of the bow are enlarged, and the rowel-stem decreased. No. 33, imperfect on one side, has a loop at junction of stem with bow, as if to support it by a strap attached to the boot. No 34 was—*Presented by Maurice O'Connell, Esq.* Nos. 37 and 38, large bronze rowels, remainder of spurs wanting. No. 39, antique spur, with loops on lower edge of bow; found at Athlone.—*Presented by P. Brophy, Esq.* No. 40, a brass spur, with twisted stem, and brass rowel; not antique.

Tray **JJJ** contains eight bronze stirrups, numbered in continuation of the foregoing, from 41 to 48, and presenting very great diversity, both in form and ornamentation. No. 41, large, 6 inches high, and 5 wide; three bars in foot-piece, bow wide, stud in front of strap-aperture (Dawson). No. 42, small, plain bow and square swivel-staple, cross-bar in foot-piece; $4\frac{1}{2}$ high, $3\frac{1}{4}$ broad. No. 43, elliptical both in bow and open-worked foot-plate; decorated; has a shell-shaped ornament in front of strap-hole; 6. No. 44, massive, highly decorated on the surface, and originally gilt; open-work foot-plate, $2\frac{1}{2}$ wide; strap-bar stands in centre of top of bow; has a highly decorated cast ornament in front; $6\frac{1}{2}$ high, $4\frac{1}{4}$ broad. No. 45, plain, modern shape, solid foot-plate, 5. No. 46, narrow and triangular, figured at p. 603. No. 47, figured at p. 603 (Dawson). No. 48, imperfect, large, massive, open-worked foot-plate; 5 wide, and $2\frac{1}{2}$ broad.

SHELF **III**, Tray **KKK**, contains ten snaffle bridle-bits; several ornamented; numbered from 49 to 58. No. 49, the massive mouth-piece of a bronze bridle-bit, with small iron rings, probably not the originals; 9. No. 50, perfect; 10; ring $2\frac{1}{2}$, with decorated studs; found at Ballynaminton, King's County, and—*Presented by G. Marsh, Esq.*—See Proc., vol. iii., p. 185. No. 51, perfect, slightly corroded; $10\frac{1}{2}$; rings, much worn, each $2\frac{3}{4}$; bit and knobs deco-

rated. No. 52, in fine preservation, resembles No. 55; decorated at end of bit; $9\frac{1}{4}$; rings, $2\frac{3}{8}$.—See Fig. 508, p. 606. No. 53, a mouth-piece, without rings, highly decorated on broad flanged extremities, narrow in hinge; part of ancient patina remaining; $7\frac{5}{8}$. No. 54, perfect, plain; $10\frac{1}{4}$; ring much worn between studs; $2\frac{7}{8}$; found at Loughran's Island, on the Bann.—*Presented by the Board of Works.* No. 55, perfect; figured at p. 605. No. 56, in high preservation; wants one ring, the other slender; $3\frac{7}{8}$; remarkable for its lightness; $12\frac{1}{4}$; stud decorated, with double spiral scroll (Dawson). Nos. 57 and 58 are of a different pattern from any of the foregoing; long, slender bits, terminating in duck-billed projections; rings flat, knobs small; the former is $11\frac{7}{8}$ long, and the rings $5\frac{1}{8}$ wide; the latter is $12\frac{1}{8}$, of which the bit is $9\frac{1}{4}$; ring-knobs decorated; space between knobs very narrow; found at Tulsk, county Roscommon.

Tray LLL contains nine bridle-bits—seven snaffles, and two driving bits,—numbered from 59 to 67. No. 59, the mouth-piece of a bit, wanting rings, joined by double hinge; $6\frac{3}{8}$ long (Sirr). No. 60, perfect, mouth-piece small, and made up of three pieces, of nearly equal size; rings slender, 3; riveted at flat ends; one stud remains; 11 (Dawson). No. 61, perfect, one large ring spliced but wanting rivets; $10\frac{3}{4}$; ring $2\frac{7}{8}$; found in the Boyne, at Kinnasfad Bridge, barony of Warrenstown.—*Presented by the Board of Works.* No. 62, perfect, large, hinge short; 12; rings $3\frac{1}{2}$; large stud-knobs. No. 63, perfect, large, bit massive; 13; rings, $4\frac{1}{8}$; decorated on one side. No. 64, slender; $12\frac{1}{4}$; rings unsymmetrical, decorated, and provided with jewel-holes; $3\frac{3}{8}$. No. 65, ditto, plain; 13; ring, $3\frac{7}{8}$. No. 66, a driving bit, without intermediate portion in hinge; perfect, large, decorated; a circular knob projects beyond edge of ring, furnished with rod-like rein-staples on each side; $12\frac{1}{2}$; ring, $3\frac{5}{8}$ (Dawson). No. 67, ditto; figured and described on p. 605.

Tray MMM contains four perfect, and fourteen imperfect snaffle and driving bits; numbered from 68 to 85. No. 68, a very perfect and elegantly formed bridle-bit of bright yellow metal, in fine preservation, but partially cleaned before it came into the Collection; $11\frac{1}{4}$; rings flat, $3\frac{1}{4}$; resembles Nos. 57 and 58.—*Presented*

by *Dr. Kelly, of Mullingar*. No. 69, perfect, but slightly corroded on surface; $11\frac{1}{2}$; rings large, knobs plain; $3\frac{1}{2}$. No. 70, ditto, in imperfect preservation; plain; $12\frac{1}{2}$; rings imperfect; $5\frac{3}{4}$.—*Deposited by Royal Dublin Society*. No. 71, the driving-bit found at Navan; figured at p. 605. No. 72, an unused bridle-ring, with mould-marks apparent all round, and showing that the ornate studs were cast as part of the original article; 4. No. 73, a flat bridle-ring, with a portion of the duck-bill bit. No. 74, part of a mouth-piece, and ring, corroded. No. 75, a very remarkable specimen; half of a mouth-piece, and a flat ring, like No. 73. This article is at present as it came from the hands of the moulder, and has never been fitted to the other half of the bit. The hole has not been drilled or punched through the flat hinge-wing, although there is a slight indication of where it was commenced in the centre of that part. The portion of the ring which plays in the hole of the bit is much smaller than the remainder, and fits the aperture so accurately, that it barely revolves in it; so that, so far as this article is concerned, the mode of casting is unknown. Upon the hinge-plate may be seen some file-markings beneath the dark-brown patina with which the entire article is covered. This very beautiful specimen was evidently in process of manufacture. No. 76, a bridle-bit, wanting one ring; in fine preservation; apparently little used; $6\frac{1}{4}$; ring-knobs, decorated; $3\frac{3}{4}$. No. 77, a curious penannular bridle-ring; 3; illustrating the mode in which such articles were formed, and attached to the bit. A circular iron bar passed into holes in the enlarged sockets of the extremities, and was fastened by cross-rivets behind the wide sockets. The fluid iron was evidently poured in through one of the side rivet-holes, and formed slags, which were never cleared off; so that this article, like the former, was evidently in process of completion, and is one of the most curious instances of the combination of bronze and iron which has yet been disclosed in the examination of those antiquities. No. 78, a penannular bridle-ring, similar to the foregoing, with a connecting bar of bronze placed within the sockets, probably by forcibly springing back the ring; decorated; the knobs form shoulders to the superadded pivot. No. 80, both sides of the mouth-piece of a bit, wanting rings and hinge portion; decorated; apparently never used. No. 81, side pieces of bit, wanting hinge and rings, much worn in apertures.

No. 82, one side of mouth-piece, decorated, much worn. No. 83, ditto; part of central member of hinge remains. No. 84, the much-worn fragment of a mouth-piece, hinge repaired by an iron rivet. No. 85, fragment of mouth-piece, much worn.

BRONZE, VII.—THIRD COMPARTMENT, NORTHERN GROUND-FLOOR.

Tray NNN contains portions of thirty-seven bridle-bits, of the third variety, averaging 5 inches wide; numbered from 86 to 122. No. 86, a rudely cast cheek-piece, as if the metal had spilled from the mould; 4 inches wide. No. 87, a cheek-piece, with decorated arm. No. 88, ditto, plain. No. 89, ditto, with two bridle-staples, one containing part of buff leather. No. 90, ditto, small; imperfect. No. 91, figured at p. 608, has portion of iron-bit remaining. No. 92, imperfect. No. 93, a cheek-piece, with long decorated extremities; $5\frac{1}{4}$; two rein-staples, with leather in one; iron rivets. No. 94, ditto; $5\frac{3}{4}$; extremities curved forwards; one rein-staple. Nos. 95 and 96, almost identical, but not from same mould; thin, narrow, plain; the latter, which is figured at p. 607, has two rein-loops; both were found at Loughran's Island, on the Bann, and—*Presented by the Board of Works*. No. 97, rude, plain; imperfect; large flat flanges. No. 98, plain, broad; ornamented. No. 99, imperfect; figured at p. 607. Nos. 100 and 101, two broad, flat, flanged cheek-pieces, almost duplicates; the latter figured at p. 607. No. 102, one side of ornamented cheek-piece, narrow and recurved. No. 103, figured and described at p. 608. No. 104, a well-preserved cheek-piece, decorated bars, apparently but one rein-staple, which still remains. No. 105 commences a series of decorated cheek-pieces, with dragon-ornament, in which the animal is represented turning back towards the loop, and holds in its mouth the decorated stays which pass into the concavity of the article.—See p. 608. No. 106, a dragon cheek-plate; has three conical studs standing out from rein-bars, and is only $3\frac{1}{2}$ wide. No. 107, of dragon-pattern, very light and elegant; beautifully cast; $4\frac{1}{2}$. No. 108, rude; cast-marks remaining but bit-bar much worn; one rein-staple. No. 109, well preserved; decorated with circular ornament. No. 110, dragon-pattern, badly cast. No. 111, ditto, slender, well cast. With No. 112 commences the horse-pattern, of which there

is a typical specimen at p. 608; rudely cast; much worn in cross-bar; imperfect. No. 113, ditto; decorated on surface, like 109. No. 114, perfect; slender; dragon-pattern. No. 115, ditto, but more massive, and decorated on surface. No. 116, very perfect; same pattern as No. 109; two rein-staples, leather in one. No. 117, complete; dragon-pattern; decorated; two rein-loops. No. 118, ditto; one rein-loop; found in Ardakillen crannoge. No. 119, ditto, finely cast; two rein-staples, leather in one. No. 120, a new pattern, in which the dragon-ornament has been preserved, but a second bar occupies the space between the wings in front of the bit-bar; $4\frac{7}{8}$. No. 121, ditto, flat, horse-pattern. No. 122, ditto, in fine preservation; has one large decorated rein-staple, with leather remaining.

SHELF II., *Tray 000*, contains twenty-five articles, consisting of bridle-bits, saddle-pommels, horse-trappings, and harness-decorations; numbered from 123 to 151. No. 123, a peculiar form of bridle-bit, with large conical projections, short cheek-piece, one long staple remaining. No. 124, imperfect; dragon-pattern, one staple. No. 125, perfect; same pattern as 109 and 116; two staples. No. 126, a new form of dragon-pattern; highly decorated, gilt; narrow between cheek-pieces; one staple. Nos. 127 and 128, fragments of dragon cheek-pieces. No. 129, complete; much corroded; two staples. No. 130, imperfect; horse-pattern. No. 131, perfect; dragon; one staple; $4\frac{3}{4}$. No. 132, horse-pattern; figured and described at p. 608. No. 133, a three-pronged article, apparently part of a bridle-bit. No. 134, a straight decorated side-piece, comparatively modern; two staples; $5\frac{7}{8}$. No. 135, ditto, smaller. No. 136, fragment of bit. No. 137, of peculiarly bright-yellow bronze, like that used in some of the culinary vessels, consists of a circle, with two curved arms, and two slight staples; it was probably part of a bridle-bit, or a fragment of harness; found in the river near Robe Abbey, Ballinrobe, county of Mayo, and—*Presented by the Board of Works*. No. 138, one side of a cheek-piece. No. 139, half of a peculiarly shaped bit, with double saw-edge; probably used in training. No. 140, ditto, but not the corresponding half; edges smaller and wider, with stay between. No. 141, a decorated piece of antique harness, imperfect; looks like portion of bridle-bit. No. 142, a portion of harness, consisting of a ring, and two decorated staples. Found with No. 143, the chariot boss and trace figured and

described at p. 611. Nos. 144 to 147 are four iron rings, covered with plates of bronze, each $2\frac{1}{2}$ wide across, with tangs on one side, in the figure of a jew's-harp; evidently chariot-staples; No. 146 was gilt; all were found with No. 143, described at p. 573. Nos. 148 to 151 are four bronze saddle-pommels, the largest of which, No. 149, is figured and described at p. 602; in length they vary from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches.

SHELF I., Tray FPP, contains eleven bridle-pendants; numbered from 152 to 162. No. 152, perfect; much worn; loops at end; slight remains of ribbed ornament on surface; $11\frac{1}{2}$ inches long, by 2 in the clear, across the boss.—*Presented by Dr. Kelly*.—See Proc., vol. vi., p. 528. No. 153, ditto; loops much worn, and decorated externally with embossed circles, terminal enlargement plain; $11\frac{1}{2}$ by $5\frac{3}{4}$; found near Castlerea, and, with No. 169—*Presented by T. G. Wills Sandford, Esq.*—See Proc., vol. vii., p. 161. No. 154, very slender; imperfect on one side; ribbed extremities; loop at right angle with arm of bow, which rises high above it; 11 by 4. No. 155, slender, wide, loops worn through, and decorated with sunken ornament on outside, stem beautifully ornamented, and socketed, possibly to hold a plume; 11 by 6; found in the old abbey ground of Emly (Imleach Brocadha, so called from St. Brocadius, a disciple of St. Patrick), near Castlerea, county Roscommon.—*Presented by W. R. Wilde, Esq.*—See Proc., vol. vii., p. 19. No. 156, slender, short, imperfect; spoon-shaped termination to prong; $11\frac{1}{2}$. No. 157, a twisted fragment. No. 158, a fine specimen, but wants one arm; decorated on prong and stem; $13\frac{1}{4}$.—See Fig. 520, p. 610. Nos. 159, 160, and 161, are fragments; the first and last were—*Presented by the Shannon Commissioners*. No. 162, long, narrow, wants one prong, knob large, loop angular.

Tray QQQ contains seven perfect pendants, broad in the bow; numbered from 163 to 169. No. 163, large, broad, not much worn; 13 by $5\frac{3}{4}$; found, with sword, No. 104, and spear-heads, Nos. 64 and 235, in the River Boyne, and—*Presented by the Board of Works*.—See p. 477. No. 164, slender, narrow, almond-shaped extremities; loops angular; 13 by $4\frac{1}{2}$. No. 165, slender, globular knobs, with angular loops; 12 by $5\frac{1}{4}$. No. 166, one of the largest and most perfect specimens in the Collection; loops at end, highly decorated, with Celtic ornament on knob and ends of bow; $14\frac{3}{4}$ by $6\frac{1}{2}$.—*Deposited, with No. 167, by Royal Dublin Society*. No. 167, ditto,

but differs in ornamentation at end of knobs and bow, where it is sunken for insertion of enamel; loops angular; 14 by 6. No. 168, ditto, terminations larger; 11 by $4\frac{1}{4}$. No. 169, with angular loops, has a plain oval knob, and spoon-shaped terminations; $10\frac{1}{2}$ by $5\frac{3}{4}$.

Tray RRR contains eight pendants, numbered from 170 to 177. No. 170, unfinished, possibly never used; a portion of metal slag remains at end of knob; loops angular; $12\frac{1}{2}$ by $3\frac{3}{4}$. No. 171, a very perfect massive specimen, figured on p. 609. No. 172, imperfect, slender; modern mending on bow; loops angular; $11\frac{5}{8}$ by $3\frac{1}{2}$. No. 173, long, narrow, unfinished; large rough decoration on top; mended in two places; differs from all others, in having loops placed at right angles with the sides, and not the inner margin of the hollow knob; $12\frac{1}{4}$ by $5\frac{1}{4}$; legs unsymmetrical. No. 174, perfect, except hole in prong; loops angular; $13\frac{1}{2}$ by $3\frac{1}{4}$ (Dawson). No. 175, perfect; large, slender; loops angular; almond-shaped terminations; that on stem split by a modern dealer for the insertion of an iron spur-rowel, which is now placed above it (see p. 611); $12\frac{1}{2}$ by $6\frac{1}{4}$. No. 176, short, broad, with open-work ornament at extremities; loops angular; one leg $\frac{3}{4}$ inch longer than the other; $11\frac{1}{2}$ by 7. No. 177, with quatrefoil ornaments, like pin 279, *Tray YY*. It is figured at p. 609.

SHELF III., *Tray SSS*, contains nineteen harness-studs, numbered in continuation of the pendants, from 178 to 196. No. 178, a ring, with two decorated staples. No. 179, a decorated ring, worn into a triangular form internally. No. 180, a britching-ring, with three staples. No. 181, ditto, decorated. No. 182, a different form, quadrangular; three staples holding portions of leather. No. 183, a very light and elegant harness-stud, consisting of four rings joined together with slender staples; looks like a toy. No. 184, a ring, with two star-like staples, highly decorated; leather remaining; measures $4\frac{1}{2}$. No. 185, a harness-ring, decorated upon both sides and top. No. 186, a ring, with three conical projections on upper surface, to limit play of staples, which remain. No. 187, a ring with four staples, plain. No. 188, a peculiarly-formed britching-plate, like three rings joined together; staples broad and quadrangular. No. 189, a britching-ring with three decorated star-like staples. No. 190, a triangular article, like centre-piece of No. 188. No. 191, plain ring, with one staple. No.

192, a decorated ring, triangular internally. No. 193, a toy-like ring, with three staples. No. 194, figured at p. 612. No. 195, ditto, plain; comparatively modern. No. 196, a britching-ring, with three staples, differing from all others in breadth, and still retaining pieces of buff leather.

Tray **TTT** contains a collection of forty-two bronze bosses, rosettes, &c., either personal, or for horse-trapping; many of them comparatively modern; numbered from No. 197 to 238. The first seventeen are circular. Nos. 197 and 198 would appear to have been saddle-terrets; all those after No. 213 are highly ornamented; many with open-work, and are good specimens of casting. A few may have been personal ornaments (see Nos. 237 to end). No. 203 was procured from Lisnafunshin, barony of Fussadinin, county of Kilkenny. Nos. 206 and 213 were—*Presented by Lord Farnham*, and No. 236—*by Mr. G. Boulger*.

Tray **UUU** contains forty-four globular or pear-shaped cattle-bells and crotals, numbered from 239 to 282. The first article is a collection of thirteen small, tinkling, globular, perforated bells, attached to a zigzag wire-hoop, each bell about $\frac{3}{4}$ inch in diameter, of very thin metal, and having shot inside; they resemble those now attached to toys, or to the fools'-bauble in ancient times; found in sinking a foundation at St. Patrick's Cathedral, Dublin, and—*Presented by His Grace the Duke of Northumberland*. Adjoining these is a string of fifteen globular bells of the same size; they emit a much duller sound; apertures, placed near the staples, which differ from those in the former set by being cast. After these follow 5 globular bells of a larger size, and decorated. The eight on the second row, numbered from 272 to 279, are larger than either of the foregoing, and vary in diameter from $2\frac{1}{2}$ to $2\frac{3}{4}$ inch. Each has a slit connecting the lower apertures, and also holes in the upper segment beside the staple, and they emit very musical sounds. In No. 277, part of the clay-core still remains. Several of these globular cattle-bells are pleasingly decorated on the lower hemispheres; six have the initials "R. W.," and one "C. O.," embossed below. This latter, No. 279, is figured on p. 612. The three last articles are pear-shaped crotals, obtained from the "Dowris Find," and of which No. 282 is figured on p. 612. They were presented by Lord Oxmantown to the late Dean Dawson, with whose collection they came into the

Academy's Museum. In size they average $6\frac{1}{2}$ inches long, by about $2\frac{3}{4}$ in the widest portion. At page 519, for Tray **UUU**, see Tray **V**, page 638.

SPECIES VII.—MUSIC AND MUSICAL INSTRUMENTS.

The principal ancient Irish musical instruments whereof we have any historic record, or of which the remains have come down to the present time were, the harp—already described and figured at page 286; the trumpet, mentioned below; and the bag-pipe, inflated by the mouth, like that still common in Scotland, and of which there are figures in Derricke's book of 1578, already referred to at page 322, but the materials of which were of too perishable a nature for preservation. There are sixteen specimens of trumpets in the Academy's Collection, arranged in the third compartment on the northern side of the ground-floor of the Museum.

TRUMPETS (in Irish, *corn*, *stoc*, or *stuic*).—The earliest Anglo-Irish notice of this instrument is that by Sir Thomas Molyneux, in his "Discourse concerning the Danish Mounds, Forts, and Towers of Ireland," 1725; but in his day it was the fashion to attribute everything valuable or curious in Ireland to the Ostmen. This opinion appears in a great measure to have arisen from the study of Olaus Wormius' treatise on the antiquities of Denmark, published in 1655; in which work may be found notices of many primeval monuments, analogous to those in Ireland; but which were as much antiquities, and as little understood by the Northmen who invaded Ireland in the ninth century, as similar structures here were to the Irish of that period; both were the works of many centuries previous, and possibly of a people identical in origin,—the first wave of population which overspread north-western Europe. Since the time of Molyneux, the term "Danish Forts" has been popularly applied to all our military raths, and many of the sepulchral mounds. The short side-mouthed trumpet, figured and described by that author, having been, with several others, "found buried in the earth,"

in a mound near Carrickfergus, was henceforth called Danish, although such articles are peculiar to Ireland, and unknown in any part of Scandinavia.

In 1750, thirteen or fourteen curved bronze horns were discovered between Cork and Mallow, and three of them were figured by Charles Smith, in his History of the County of Cork. Three of these trumpets passed into the possession of Bishop Pococke, the distinguished traveller, and Irish antiquary, with whose collection they were subsequently sold in London, and were figured in the *Vetusta Monumenta*, by the Society of Antiquaries. There is every reason to believe that they were the identical articles described by Smith; and they were afterwards copied by J. C. Walker, in the Appendix to his "Historical Memoirs of the Irish Bards," 1786. One of these resembles No. 12 in our Museum (see Figs. 526 and 529), with a lateral aperture or mouth-hole; the other two were simple curved horns, like Fig. 524; but with these were found pieces of straight tubing, like that represented by Ousley, and which were then believed to have formed parts of these trumpets. It does not, however, follow that they were portions of, or in any way attached to, the horns with which they were discovered; and if (as we believe) they were portions of a "Commander's Staff," as stated at page 492 (see Fig. 360), it was not an unlikely place for such articles to be found, where the commander of a battalion had also his speaking-trumpet, as well as his trumpeters beside him, when he fell in battle. That a curved trumpet, attached to each end of a straight tube, four feet long, could not be of any use known or conjectured in the present day, is manifest. The subject, however, requires further illustration. It is worthy of note, that, in nearly every instance, several trumpets, and generally including two varieties, have been found together.

In 1783, Vallancey figured a side-aperture trumpet, from a specimen in the Museum of Trinity College; and to his description appended some conjectures as to its use in sounding

from the tops of round towers, &c.* Vallancey's plate of the horn referred to was inserted in Gough's Camden, in 1789.

Three trumpets, and a portion of straight tube (possibly that figured at page 492), precisely similar to those described by Smith, were discovered in the county of Limerick in 1787, and were figured by Ralph Ousley, in Vol. II. of the Transactions. In 1794 four brazen trumpets were found in a bog on the borders of Lough-na-shade, near Armagh. One of these, figured by Stuart, in his History of Armagh, is the large riveted trumpet with a decorated disk, and central globular connecting portion, now No. 8, Fig. 527, in the Academy's Collection, and which is joined with rivets; whereas all those previously noticed were cast. In 1809 both joints of a very large and perfect curved bronze trumpet, or bugle-horn, were found in peat at Ardrin, parish of Anaghclone, county of Down, and were minutely described by Mr. Bell, in the Newry Magazine, for 1815.† This fine specimen is also in the Museum: see No. 9 Fig. 528.

* "The Irish," said Vallancey, "had various kinds of trumpets, viz., the *stoc*, *buabhall*, *beann*, *adharc*, *dudag*, *corn*, *gall-trumpa*." The same terms were adopted by his followers, Ledwich and Walker, the former of whom adds six other names to the list of Irish wind instruments; but none of these writers give any authority for such words.

I am indebted to Mr. Curry, who has already furnished all the Irish names used in this Catalogue, for the following note on ancient musical instruments:—"Cruit, a harp; *Timpan*, a drum or tambourine; *Corn*, a trumpet; *Stoc*, a clarion; *Pipai*, the pipes; *Fidil*, a fiddle. All these are mentioned in an ancient poem in the Book of Leinster, a MS. of about the year 1150, now in the Library of Trinity College; and the first four are found in various old tales and descriptions of battles. I have not found any reference as to the particular form of these instruments, and never met any allusion to a speaking-trumpet."

Giraldus Cambrensis, in his Itinerary of Wales, describes the brazen horn of St. Patrick, to which miraculous powers were attributed.

† In the four volumes of that well-conducted publication will be found many valuable articles on Irish antiquities, from the pen of Mr. Bell, now of Dungannon, one of the earliest pioneers of that subject in the present century. The bog where the trumpet referred to above was discovered had been a lake about the middle of the last century. In 1815, a stratum of burned oak was found in it, and a boat scooped out of a single tree; together with four short paddles;—so that possibly it was the site of a crannoge.

In 1833, Dr. Petrie, in an article on Irish trumpets, published in the Dublin Penny Journal, Vol. II., figured a cast bronze horn, one of several found at Dowris, and which was then in the possession of the Dean of St. Patrick's; it is now No. 11 in the Academy's Collection.

In 1835, several trumpets were discovered in a bog near Killarney, some of which were subsequently in the possession of Lord Londesborough and the late Crofton Croker; and some are still in the collections of Mr. Windele, and other persons at Cork.

In 1847, three trumpets were discovered near Cloghoughter Castle, county of Cavan, and were—*Presented to the Museum by Lord Farnham*.—See Nos. 6, 14, and 15. Several others, the particulars of which are not known, came into the possession of Dean Dawson, with whose collection they were purchased by the Academy.

In 1840, four trumpets were discovered in the bog of Drumabest, parish of Kilraughts, county of Antrim, two of which were sold to the British Museum, by the late Mr. Carruthers, of Belfast. The two others remain in Ballymoney, and have been figured by Mr. M'Adam, the last writer on the subject, in his learned article in the Ulster Journal of Archæology for January, 1860. Of these four, two belong to the variety with lateral apertures; and the others were of a rare description, of which we have no example in the Museum of the Academy. That figured by Mr. M'Adam is 35 inches long, and has a double curve, the small upper portion turning backwards; it was blown from the end, and is provided with a staple and suspending ring.

These notices, together with the details given in the Catalogue of trumpets at page 633, include nearly all that is known on the subject of such articles found in Ireland, of which there are some fine examples in the British Museum. From the foregoing and following remarks, it would appear that five distinct varieties of trumpets have been found at different times in this country.

The bronze horns and trumpets now in the Collection are of two kinds—those blown from the ends, but the mouth-pieces of which (if such there were), are not forthcoming, and of these there are three varieties—two cast, and one riveted; and the cast trumpets with lateral embasures, and closed at the small extremities. The most remarkable specimens of all these are represented in the following illustration. The first cut, to the right of the central top specimen, is a short, cast, curved horn, No. 2, which measures 24 inches along the convex margin; it is $3\frac{1}{4}$ wide in the great, and $1\frac{1}{8}$ in the small end, and has a set of large conical projections standing out from either end, and decorated round their bases. There are also four holes in each end, and the small aperture is slightly everted, as if for holding the lips; but it requires a great exertion to produce even a dull sound with this instrument. There are four perfect specimens of this variety in the Collection, all of which are cast. One of these, No. 1, is a beautiful example of brilliant, golden-red bronze, and was found at Dowris. The largest perfect specimen is 15, and the smallest $10\frac{1}{2}$ inches, measured from point to point. Another variety of this trumpet is figured on page 629.

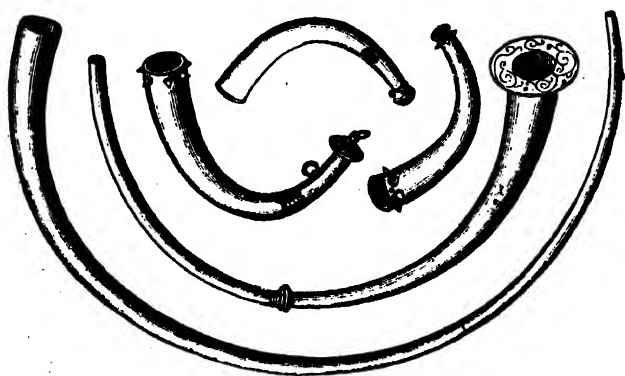


Fig. 524. No. 2. Fig. 525. No. 11. Fig. 526. No. 12. Fig. 527. No. 8. Fig. 528. No. 9.

The top central figure, and that immediately beneath it, to the left, Nos. 11 and 12, are specimens of the third variety,

all of which have been arranged in the end case adjoining the door of the Library, and are numbered from 10 to 16. Like the former, each was cast in one piece, but closed, generally by a knob at the small end, and furnished with one or two loops and rings at or near that point. Some have conical spikes round the larger ends, like those of the first variety, and evidently belonging to the same class of decoration seen in some of the brazen cauldrons figured on page 530. About the junction of the middle and upper thirds, and towards the inner side, when the instrument is held with its large end turned to the left shoulder, each has a smooth oval aperture, averaging 2 inches long, and $1\frac{1}{4}$ wide. It is not possible, by any yet discovered method of applying the lips to this mouth-hole, to produce a musical sound; but, as conjectured by Walker in 1786, these instruments might have been used as speaking-trumpets, to convey the voice to a great distance, as well as render it much louder. Mr. M'Adam, in his recently published paper on Irish trumpets, adopts this opinion, but applies it too generally to all our native instruments.

Trumpets of this description might have been useful to commanders in the warfare of former days, when the chief battle-sounds were the shouts of the combatants, the clash of arms, or the groans of the wounded. Of the foregoing illustrations, No. 11 is perfectly plain, and measures 24 inches along the convex margin, and $2\frac{1}{2}$ in its greatest width, with a circular termination at the small end, and a narrow ring-loop at top. Ridges, like those left from the imperfect adjustment of the moulds—but probably part of the original design of the founder—pass along both the concave and convex edges. It appears to have been broken across near the centre, and afterwards repaired, probably by the process called burning in, or—"pouring melting metal at a glowing temperature upon the junction of two [heated] pieces, and by that means fusing the entire into one mass."—See Proceedings, vol. iv., p. 428; see also the method of mending bronze

swords, described at page 456 of this work. This trumpet, which formed a portion of the "Dowris Find," and was procured with the Dawson collection, has been figured in the Dublin Penny Journal. No. 12 is one of the finest specimens which as yet has been discovered; of bright yellow metal, measuring $34\frac{1}{2}$ inches round the convex side, and $3\frac{1}{2}$ in width at the large opening; above, it terminates in a decorated head, $2\frac{1}{2}$ inches in diameter and furnished with a large ring. There is another ring near the upper end of the concave side. It was broken across at the mouth-hole, and most ingeniously mended by pouring melted metal round the fracture, when probably the ends were heated by the method



Fig. 529, No. 12.

already explained. The additional metal has also been fused round the inner surface. Its lower edge is decorated with conical spikes. Figure 529 shows the details, already described, of the upper portion of this trumpet. It was found near Derrynane, county Kerry, and obtained through the instrumentality of Mr. Du Noyer.

Of the first variety, like Fig. 524, described at page 629, and in which the aperture is at the end, there are two remarkably shaped instruments in the Collection, Nos. 5 and 6, in which the curves are different, and the small extremities appear to have been fitted either to mouth-pieces or to other joints. Each



Fig. 530. No. 6.

is cast in one piece, of dark metal, and strengthened on both edges by lateral projections still larger than those on No. 10. No. 6, Fig. 530, is decorated at both extremities, and in the centre of the straight portion, near the top of which there is a small ring-loop; the jointing part, be-

neath the decorated shoulder, is $1\frac{1}{2}$ inch long. It measures $22\frac{1}{2}$ inches on the convex edge, is $2\frac{1}{2}$ wide at the mouth, and $\frac{7}{8}$ at the small end. It was found with Nos. 15 and 16, at Cornaconway, near Cloghoughter Castle, county Cavan, and—*Presented by Lord Farnham*. No. 7, perfect, heavy, and a little larger, is of precisely the same shape, and was found at Roscrea.

The third variety is represented by the two large trumpets of the bugle-horn shape, Figures 527 and 528, in the illustration at page 627. Each of these consists of two portions, but no mouth-pieces were discovered with them. The first would appear to be that found in the county Armagh, in 1794, and figured by Stewart; and the second, now the lowest specimen in the illustration is that discovered in the county Down, and described by Mr. Bell. The peculiarity of these trumpets is their great length, and the ingenious mode by which each is joined along the concave side by a series of minute rivets fastened to a strap of metal, which runs the entire length of the inside in No. 9, and partially on both sides in Nos. 7 and 8.

The trumpet No. 8 is composed of two portions—the large lower conical part, with a decorated disk below, and a circular boss at top, to connect it with the slender upper part, the sides of which are nearly parallel; both together measuring, on the convex margin, about six feet—not cast, but formed of very thin, sheet bronze, closed by seams along the concave edge, in the following ingenious manner:—A strip of thin metal, half an inch wide, extends along the seam internally, and is united to each side by a series of nail-headed studs, in alternate spaces, with $\frac{7}{8}$ inch between; externally another strap, doubled on itself in the centre, evidently to strengthen it, runs over the seam, and is fastened by a series of small well-formed rivets, placed at regular distances, and passing through the three plates of metal. By this contrivance, which must have preceded the knowledge of junction by soldering, the

instrument was rendered perfectly air-tight. The cast boss at top is about 3 inches wide, and was fastened by interlapping with the tube. This lower part of No. 8 was evidently long in use, and has been most ingeniously patched and mended in several places by riveted plates and collars. The narrow upper tube is in two portions, passing, at the junction, into each other, but manifestly part of the same instrument; their seams are joined by the same plan of riveting as that described above, but in a ruder way.* The decorated disk below, the details of the punched or hammered-up ornament on which are shown in the accompanying illustration, measures $7\frac{1}{2}$ inches across. Its style of decoration much resembles that of the large shield-like plates on Tray **v v v**, and represented by Fig. 533, page 637. Its present mode of attachment to the trumpet-mouth is evidently modern.



Fig. 531. No. 8.

The great trumpet in this Collection is No. 9, represented by Fig. 528, in the illustration on page 627, certainly the finest article of the kind which has yet been discovered in Europe; it was found in the Co. Down, in 1809. It measures 8 feet 5 inches along the convex margin, and consists of two portions, each formed of very strong sheet bronze, of a yellowish-red colour, and joined along the seam by means of a riveted plate; but far surpassing, in ingenuity and handicraft, any of the foregoing articles of this description. It is $3\frac{1}{2}$ inches

* The Scandinavian trumpets, of which there are six perfect specimens in the Museum at Copenhagen, were all cast in separate lengths, and resemble in size No. 8 in R. I. A. By means of a "wind" in each of the two perfect articles in that collection, the lower portion presented in front of the performer, while the small end passed round his neck.

wide at the open of the large end, and $\frac{1}{4}$ at the upper; the smaller tube has parallel sides, and is about the size of the small extremity of the larger; but by what means the two were joined, or whether a mouth-piece was attached to the small extremity, is unknown. The riveting of the edges in this instrument is the most perfect thing of its kind yet discovered, and is well exhibited in the accompanying cut, drawn, the natural size, from portions of its external and internal surfaces. The bronze strap which covers the joining on the inside is studded with small, circular-headed studs, riveted on the outside, as shown in the lower section of this cut. There is no strap externally; and the perfection of the riveting has long been a subject of admiration to the curious, there being as many as 638 rivets in this lower portion. By what means they were introduced throughout, or what description of mandril was employed for riveting them upon, is still a subject of speculation. A great variety of loud, martial tones, can be produced by the lower fragment of this trumpet; but the want of a mouth-piece renders it difficult to play upon. This is the instrument discovered in the County Down, and described by Mr. Bell, see page 625.

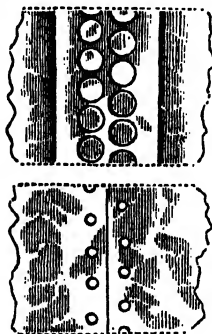


Fig. 532. No. 2.

Diodorus Siculus, writing of the Celtic Gauls, states—“they have amongst them trumpets peculiar as well to themselves as to other nations; these, by inflation, emit an hoarse sound, well suited to the din of battle.” And Polybius says that “the parade and tumult of the army of the Celts terrified the Romans; for there was amongst them an infinite number of horns and trumpets, which, with the shouts of the whole army in concert, made a clamour so terrible and loud, that every surrounding echo was awakened, and all the adjacent country seemed to join in the horrible din.”

BRONZE VII.—THIRD COMPARTMENT; NORTHERN GROUND-FLOOR.

The sixteen bronze trumpets have been arranged in the top space of the third Compartment, and are numbered from 1 to 16. No. 1, a very perfect horn, of bright gold-coloured bronze, referred to at p. 627, decorated at both extremities, with conical projections, four above, and six below; measures 21 inches round the convex margin; is $3\frac{1}{2}$ across the open of the large extremity, and $1\frac{3}{4}$ wide in the slightly-everted small end; found at Dowris, near Parsonstown, King's County, and presented, together with No. 11, by Lord Oxmantown, to the late Dean Dawson, with whose collection they came into the Academy.—See Proc., vol. iv., p. 423. No. 2, ditto, fractured in centre; figured and described at p. 627. No. 3, a short trumpet, perfect; open at the small end; thin, cast; 24 inches round convex margin; $3\frac{3}{4}$ across large, and $1\frac{3}{4}$ wide at small extremity; with six conical projections below, and four at top, together with four rivet-holes at that end. There are a number of small holes throughout the instrument, either from corrosion, or through defect in casting; and it has been mended by pouring in fresh metal, in three places, on the greater curvature towards the large end. No. 4, ditto, imperfect, of very thin bronze, much worn and battered; conical studs at large end, similar to those in foregoing. Nos. 5 and 6 are of a different variety, elongated in small extremity, and almost identical in shape. No. 5 is cast; heavy; very slightly decorated; without rivet holes at either extremity. It measures $23\frac{1}{2}$ inches round convex edge; $2\frac{1}{4}$ across; large; and $\frac{7}{8}$ at the small extremity, which is $1\frac{7}{8}$ in length, from the raised shoulder; ring-loop on upper portion of concave edge; found at Roscrea (Sirr.). No. 6, ditto, thinner, slightly imperfect on one side; figured and described at p. 629. No. 7, a thin bronze tube; 34 inches long, and $1\frac{1}{8}$ in diameter, with circular ferule; bosses at the extremities; manifestly a portion of a bronze trumpet, in the highest perfection; riveted along the concave margin to a strap of thin metal, one-half inch wide, the rivets about one-half inch asunder, with the head inside, not placed in pairs, but obliquely as regards each other, as in the spear-ferule figured and described at page 504. Although these rivet-heads are flat near the extremities of this tube, they become prominent, and irregular towards the interior. The joining of the sides is most

accurate, and the article is perfectly air-tight, but, owing to its parallel sides, does not produce any musical sound. The ferule-bosses, each about $2\frac{1}{2}$ inches in diameter, were evidently fixed in their present positions by interlapping at the upper margins of the extremities of the tube, as in modern tin-work. This article evidently formed a portion of a trumpet similar to the following. No. 8, the large thin trumpet described as Figs. 527 and 531, at pp. 627 and 631; composed of two portions, the upper and smaller one also consisting of two parts, one inserted within the other. No. 9, the large perfect trumpet, in two portions, delineated by Figs. 528 and 532, and described at p. 631.

The following trumpets have lateral apertures. No. 10, slightly imperfect at small end, including a portion of the mouth-hole, which is 30 inches from the large end. The decorated studs around the lower opening resemble those in No. 2. It was found near Macroom, Co. Cork, and was given by John Lindsay, Esq., to Dean Dawson. No. 11, described at p. 627, see Fig. 525. No. 12, large bronze trumpet, with lateral aperture, described at p. 629, see Figs. 526 and 529. No. 13, upper and lower fragments of a trumpet of the same variety, of very brittle metal; $2\frac{1}{2}$ wide; ridge on concave, and convex edges, like the result of a mis-adjustment of moulds, but evidently intended to add strength to the article; extremity surrounded by twelve small studs, now enveloped in a coating of additional metal, poured around them, when in a fluid state, to repair some deficiency in the margin; this addition passes over both sides of the fractured ends, for about $1\frac{1}{4}$ inch. The new edge is decorated with a raised torque-pattern. This artistic mode of perfecting the open of the instrument, which is $2\frac{1}{8}$ in diameter, shows how necessary the completion of that part was to the perfection of the instrument, and is also a most curious instance of repair in ancient bronze. The upper fragment is of the same description, with flanges on both curvatures; ring-loop; mouth-hole small, and thick round margin. It was found with Nos. 6 and 14, at Corraconway, county Cavan, and—*Presented by Lord Farnham.*—See p. 626; see, also, Proc., vol. iii., p. 530. No. 14, fragment of the large extremity of a trumpet, so like the foregoing, as to appear to have been cast in the same mould. There is, however, a slight difference in the ornamental studs around the opening; found with the foregoing. No.

15, ditto, imperfect, ring-loop near small mouth-hole (Dawson). No. 16, ditto, with two loops—one at top, the other on the side, similar to No. 12, the extremity contains a quantity of fine drab-coloured sand, possibly the remains of the casting-core.

For the remains of harps, see Rail-case P, page 599.

SPECIES VIII.—MONEY, COINS, AND OTHER MEANS OF BARTER.

At the period of the Roman invasion of Gaul and Britain, Cæsar informs us that the inhabitants of those countries “used for money gold and iron rings of certain weight;” but says nothing of bronze or silver. Vallancey, writing in 1783, adopts this passage, and applies it to the elucidation of the use of a double bronze ring found in Ireland, like that represented by Fig. 452, page 578, of this work; but which, and all similar articles, of which there are a great many in the Collection, have since been proved to be fragments of ring-chains. Sir W. Betham enlarged upon this idea of the author of the *Collectanea* (but without acknowledgment); and, in two papers, read to the Academy in June, 1836, and January, 1837, and printed in Vol. xvii. of the Transactions, figured, and described as ring-money, a large and miscellaneous collection of articles of various shapes, sizes, and weights; but chiefly penannular rings of bronze, gold, and silver.* The single, double, and triple rings of the former metal, undoubtedly, belonged to chain dress, or armour; and, although some small gold rings (several ancient forgeries of which have been discovered), may have been used as a means of barter, the uses of the other articles figured by that author, are now well established as fibulæ and armillæ. When we reflect on the great number of antique metallic articles to which rings were attached, the

* In Sir W. Betham's second paper, alluded to above, he quotes a letter of Mr. Sainthill, of Cork, stating that metal rings were then manufactured at Birmingham and used for trading with people on the coast of Africa; but, adds Mr. S., they “are a composition of brass and copper; they are called *manillus*, and are worn as ornaments, and pass as the representatives of money.” Some were manufactured of iron.

number of these found in Ireland will not appear surprising: See the further consideration of this subject in the description of the articles of gold and silver.

SPECIES. IX.—*Medicine* is only represented by one bronze surgical instrument, No. 38, in Rail-case Q. All the bronze articles connected with **SPECIES X.**—*Religion*—will be considered under the head of ecclesiastical antiquities; and there are no representatives of **SPECIES XI.**—*Sepulture*—among the metallic articles of any description in the Collection.

SPECIES XII.—**MISCELLANEOUS.**

The true eclectic method of investigating the remains of the past—our increased knowledge of the contents of the museums of other countries, and a rational comparison of the relics of our ancestors with articles in use in the present day, together with a common-sense view of antiquities generally—has left very few articles the use of which may not be fairly assigned, or plausibly conjectured. Still, if the house of a wealthy citizen of the present time were, with all its contents, to be sunk beneath the earth's surface, and dug up one thousand, or five hundred years hence, the antiquary of that day would find some articles, the precise objects of which could not be determined with sufficient certainty to warrant their being grouped with any of the species described in the classification adopted in such a Catalogue as this. The most notable collection of articles, the object of which has as yet puzzled antiquaries, is the set of six bronze disks, arranged on Tray **vvv**, in the third compartment of the northern ground-floor, and of which the accompanying illustration is a good example. It is drawn from two imperfect specimens, Nos. 1 and 5; the line *a, b*, marking the division in the restored drawing. They average 11 inches in diameter, and are slightly dished, or hollowed, with nearly central cups or depressions. As already stated, the general design of the ornament is that of a series of horns or trumpets, with their bases

approaching each other; together with crescentic and spiral decorations. Each of these plates is hammered out of a tolerably thick piece of metal; and, as some of them are in an unfinished state, they afford the means of examining into the process of their manufacture. Although the general characters are the same in all, each differs slightly in detail. The pattern was

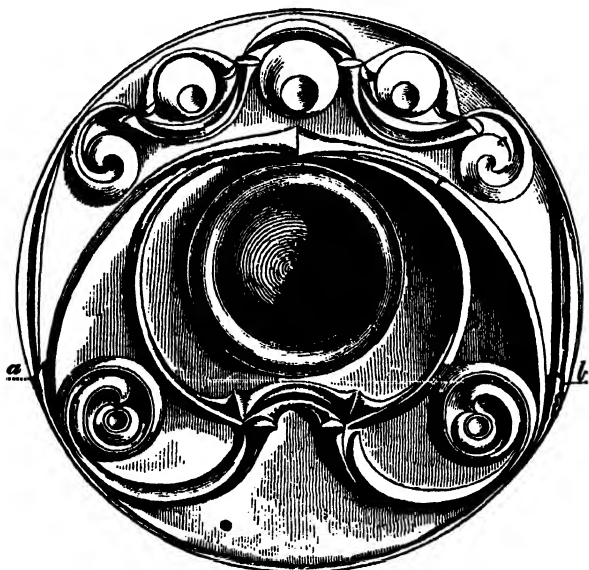


Fig. 533. Nos. 1 and 5.

first marked out by a rounded elevation on a concave surface, punched or hammered-up from the reverse side; and in this state two of these bosses still remain. Then, by a continuation of the process in front, and possibly working on a block of pitch, or other yielding substance, these raised portions were rendered as thin as writing paper, and the whole embossment was made to assume externally a polished surface, and a sharpness of outline that is truly marvellous. Finally, the extreme edge was formed into a distinct line of the most exquisite finish, as is well seen in the intersecting curves in the lower section of the foregoing illustration. On the subject of the

spiral form of Irish ornament, the late John Kemble, in his eloquent address to the Academy in 1857, justly said:—

“ There is a peculiar development of the double spiral line, totally unknown to the Greeks, the Etruscans, and the nations of the Teutonic North, which is essentially characteristic, not only of the Scoto-Keltic, but the Britanno-Keltic populations of these islands. If the lines are allowed to diverge, instead of following one another closely in their windings, they produce that remarkable pattern which, since a few years, we have been in the habit of calling the trumpet-pattern, and which, from one of its peculiarities, is sometimes called the *thumb* pattern. When this is represented in a plane surface, in the illuminations of MSS., you have that marvelously beautiful result which is familiar to you in the ‘ Book of Kells;’ to us in the ‘ Book of St. Cuthbert,’ or ‘ The Durham Book,’ in the British Museum; and in the equally beautiful records of Scoto-Keltic [Irish] self-devotion and culture in the MSS. of St. Gall, in Switzerland. When, as is often the case in metal, this principle of the diverging spiral line is carried out in *repoussé*—when you have those singularly beautiful curves—more beautiful, perhaps, in the parts that are not seen than in those that meet the eye—whose beauty, revealed in shadow more than in form—you have a peculiar characteristic—a form of beauty which belongs to no nation but our own, and to no portion of our nation but the Keltic portion. The trumpet-pattern is neither Greek, nor Roman, nor Oriental. There is nothing like it in Etruscan art; there is nothing like it in German or Slavonic art; there is little like it in Gallic or Helvetian art: it is indigenous.”—See *Proceedings*, vol. v., p. 475; see likewise Dr. F. Keller’s illuminations and fac-similes from Irish MS. in Switzerland; translated in the *Ulster Journal of Archæology*, vol. viii., p. 224.

Respecting the uses of these articles—which have as yet been found only in Ireland—we are still in the dark; the most probable conjecture is, that they were portions of shields.

Among the other miscellaneous articles, illustrative of native art, may be specified the following:—

Figure 534 is drawn one-half the natural size from No. 17, a bronze figure, which serves to illustrate the subject of costume, described at page 259. This article resembles the figures



Fig. 534, No. 17.

represented on page 320; and probably formed a decoration on some flat metallic surface.

Figure 535, drawn the true size, from No. 24, in Rail-case P, represents two portions of a thin curved strap of cast bronze, $8\frac{1}{2}$ inches long, and highly decorated all over the external surface. It was found in the Shannon, near Athlone, and—



Fig. 535, No. 24.

represented by the Shannon Commissioners.

The concluding cut, Fig. 536, shows the interlaced strap-work on a hollow bronze sheath or ferule, No. 8 in Rail-case P, shaped somewhat like a crocodile's head. It is 4 inches long, and is partially open underneath: see page 640.



Fig. 536, No. 8.

Tray VVV contains six bronze embossed plates, three of which are quite perfect. No. 1, incomplete, but forming, with No. 5, Fig. 533, on p. 637; 11 inches wide; the workmanship very imperfect. No. 2, complete, fished; 11 in diameter; apparently in process of manufacture, the edges of the elevated portions being round, except in one of the decorations towards the lower margin, where it has been worked out into a sharp, well-defined pattern. No. 3, ditto, flat, unfinished, except in one small ornament near the top; small, and probably modern, oval aperture in central depression; stout everted rim; found, with No. 4, at Monasterevan, Co. Kildare (Sirr). No. 4, imperfect in some places, unfinished; $11\frac{1}{2}$. No. 5, imperfect towards lower edge, but the most highly finished specimen in the Collection, forming, with No. 1, the illustration at p. 637; cen-

tral depression deep, with raised curved margin; diameter, 10 inches. No. 6, fragment of the right side of a boss, like No. 1.

Rail-case P, continued from p. 599, Miscellaneous articles.—No. 7, a curious article, like a crocodile's head; hollow, raised cast ornament, triangular projections at end; $4\frac{3}{4}$. No. 8, ditto, figured at p. 639. No. 9, rude hollow model of a sheep; $2\frac{3}{4}$. No. 10, ditto, hollow; a good representation of the ancient Irish pig; $3\frac{1}{4}$. No. 11, ditto, of a boar, fuller, and evidently of an improved breed; $3\frac{1}{4}$. No. 12, figure of a frog; $1\frac{1}{2}$. No. 13, a solid piece of brass, in shape of a boot; $2\frac{1}{4}$. No. 14, ditto; $2\frac{1}{4}$. No. 15, a bronze capsule, with three apertures. No. 16, a curious antique figure on flat plate, rude, and showing commencement of art in figure-making; arms akimbo, head attached; plate not cast, but cut, punched, and chiselled; evidently intended to be placed on a flat surface. No. 17, figured and described at p. 639. No. 18, antique figure, like an idol; with a stem beneath, for fixing it on a pedestal; $3\frac{1}{4}$. No. 19, antique classic female figure, well draped on both sides, with stud below for pedestal; $2\frac{1}{2}$. No. 20, ditto, a complete statuette. No. 21, modern; a draped figure with Phrygian cap; holding an inverted torch; 3. No. 22, antique figure, probably of Minerva, well-cast and draped, possibly Roman; $3\frac{1}{2}$. No. 23, curious grotesque human figure, hollow, of antique bronze; stands on tripod formed of its legs and a projection like a tail—arms crossed in front, as if in the act of nursing; naked, except girdle and close-fitting head-dress; resembles a small lavatory; $4\frac{1}{2}$ high. No. 24, a thin, curved plate of bronze, with grotesque head, figured at p. 639. No. 25, a plate of bronze, shaped like a broad cross, edges supported by narrow additional straps; covered with small circular studs, for holding stones; probably the frame-work of a shrine decoration; $5\frac{1}{4}$. No. 26, a small hat-shaped boss, like the miniature umbo of a shield; $\frac{3}{4}$. No. 27, a circular disk, corroded; $1\frac{1}{4}$. No. 28, a curious almond-shaped instrument, hollow, formed of two elongated hemispheres; a loop at one end, a solid stem at the other; $1\frac{1}{2}$. No. 29, lower portion of a similar article, with tubular stem; $1\frac{1}{4}$. No. 30, possibly top of antique balance; $2\frac{1}{2}$ high, with three square projecting sockets; cock's head on top; cleft projections behind.

Rail-case Q.—No. 31, a brass Beggar's badge, circular; $1\frac{1}{2}$; marked, "St. Mark's Parish, No. 7;" found in excavating for

foundations at King's Inns-street, Dublin; oval, bas-relief in centre, representing apostles healing the lame man; city arms at top.—*Presented by R. Mallet, Esq.* No. 32, ditto, marked, "St. Ann's Parish, No. 7." No. 33, circular, plain; 3 wide; marked, Parish of Tidavnet, 1742. For note on Beggars' Badges, see *Ulster Journal of Archæology*, vol. viii., p. 232. No. 34, a curious badge; 3 wide; bearing a large monogram on surface; originally gilt and enamelled. No. 35, a square messengers' badge, ornamented in relief, with a three-masted ship, and bearing the names "And" Murray and John Tew;" $3\frac{1}{2}$ by $3\frac{1}{8}$. No. 36, an oblong thin plate, coated with tin, and decorated with intersecting lines on reverse side; $7\frac{1}{2}$ by $2\frac{7}{8}$. Externally it had originally two circular bosses, with intermediate plates; one decorated cast boss, $2\frac{1}{4}$ wide, still remains; trumpet-pattern. It appears to have been part of a belt-ornament; and was found at Clonard, county Meath. No. 37, a thin ornamented plate, probably part of a similar article. No. 38, a conical piece of metal, $1\frac{3}{8}$; with a stem, $12\frac{1}{4}$ long; apparently a cauterizing implement. No. 39, a large purse-clasp, believed to be part of an almoner's money-bag; $5\frac{1}{4}$ wide. No. 40, ditto, semi-circular; $5\frac{1}{8}$. No. 41, bronze bifurcated tube in shape of bird's claw; ornamented; 4; possibly part of a lamp. No. 42, gargoyle-shaped article, with human Egyptian-face decoration, possibly spout of lavatory; $3\frac{1}{2}$. No. 43, capsule of thin yellow metal perforated at sides; $1\frac{1}{2}$. No. 44, a rudely cast piece of bronze, resembling the foot of some household article, possibly a lamp; found in the county Longford (Dawson.) The four next articles resemble tops of fire-irons, hollow, and slightly ornamented below. No. 45, covered with antique green patina; $2\frac{3}{8}$ high. No. 46, ditto, contains a portion of iron in the socket; antique decoration; found at Keelogue Ford, in 1843.—*Presented by Shannon Commissioners.* No. 47, short, pale metal, with lead impacted in socket. No. 48, ditto, small; $1\frac{1}{8}$. No. 49, a decorated hook; massive; formed to fit a screen-pole; hinged at small ends; sides fastened by a screw at large extremity; 9 inches round convex edge. No. 50, an angular piece of metal, decorated; $7\frac{3}{8}$. No. 51, a small screw-like article, beautifully cast, and tastefully decorated; $1\frac{3}{8}$. No. 52, ditto, with revolving pendant; originally gilt. No. 53, corkscrew-like article, with pivot; 5. No. 54, a decorated piece of bronze; 4. No. 55, a long piece of bronze,

shaped like a "hanger," bevelled at back; fractured; $1\frac{1}{2}$. No. 56, a piece of brass tubing; 7. No. 57, ditto, 6 (Sirr.) No. 58, a penannular tubular collar, with wide flange, open at side; unfinished; $7\frac{1}{2}$ in diameter; tube, $\frac{3}{8}$. No. 59, piece of brass tube; $7\frac{1}{2}$; found at Clontarf. No. 60, a set of three small tubes, like cartridge-holders joined together; $3\frac{3}{8}$. No. 61, a cruciform decorated article, probably a latch; $5\frac{3}{8}$. No. 62, a metal strap. No. 63, a well-cast piece of decorated open-work, cruciform; surface covered with small embossed floral patterns; $5\frac{1}{2}$. No. 64, ditto, small; $2\frac{5}{8}$. No. 65, ditto, $2\frac{1}{2}$. No. 66, a curious decoration, with double bird-head; embossed on surface; $2\frac{1}{2}$. No. 67, small piece of bronze; 2. No. 68, cruciform piece of bronze slag; 7. No. 69, a long, slender, T-shaped article, apparently very ancient; $8\frac{1}{2}$; covered with thick brown patina. No. 70, a crescentic piece of bronze; 4 wide; well-cast; marked on edge with a decoration, modern, possibly a tool. No. 71, a pendant, like tongue of bell. No. 72, a small shamrock-shaped article, like three buttons joined together. No. 73, an oblong plate, well-cast, with "VIVAS IN DEO" in raised letters (Dawson). No. 74, small brass pistol, in one piece; $6\frac{1}{2}$. No. 75, crozier-shaped decorated article, inlaid; horse's head in front; 3. No. 76, small bow, with square sockets; $1\frac{1}{2}$. No. 77, spur-strap. Nos. 78, 79, 80, and 81, fragments of metal. No. 82, an ancient book-clasp, beautifully decorated with Irish scroll-work; 3. No. 83, spoon-shaped disk; $2\frac{1}{2}$. Nos. 84 and 85, small bronze rods. No. 86, hinged piece of metal; 3.

The subject of House-bells will be considered in another place.

In the first Cross-case on the ground-floor, top shelf, No. 87, is a massive bronze mortar-shaped article, with side-handles, and decorated with cog-like elevations; $3\frac{1}{2}$ high by $3\frac{1}{4}$ wide; found near Thurles, and—*Presented by Henry Grattan, Esq.* Nos. 103 and 104, two bronze moulds, in fine preservation, omitted in description of tools at p. 597. The first resembles a button-mould, and has four human faces on one of the stamps. No. 104 is $2\frac{3}{4}$, and has eleven stamps.

For the description of the metallic Scandinavian collection, continued from page 153, see conclusion of metallic articles.

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